DOCUMENT RESUME

ED 211 100 IR 009 928

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TITLE Media Resources in Curriculum Development.
INSTITUTION Council for Educational Technology, London (England).; Scottish Council for Educational Technology, Glasgow.
REPORT NO ISBN-0-86001-020-6
PUB DATE 80
NOTE 94p.

EDRS PRICE MF01 Plus Postage. PC Not Available from EDRS.
DESCRIPTORS *Audiovisual Aids; Educational Assessment; *Educational Media; Elementary Secondary Education; Foreign Countries; *Media Selection; *National Programs; *Resource Allocation; Teachers
IDENTIFIERS *Scotland

ABSTRACT

Primarily concerned with input to secondary school curriculum development as promulgated in the four national centers of the Scottish Curriculum Development Service (SCDS), this study investigated the ways in which national working parties integrate media resources into their projects, how schools tackle the media elements, and problems of production and availability of media resources at the national level, as well as their function and use. An overview of the agencies involved in the field of media input provides brief descriptions of the agencies and their roles, including the Consultative Committee on the Curriculum, the SCDS, working parties, the Inspectorate, colleges of education, the Educational Authority Advisory Service, broadcasting authorities, the Scottish Council for Educational Technology, and publishers and national centers. The activities of the national centers in Aberdeen, Dundee, Edinburgh, and Glasgow are described, and areas of need identified by the investigation where appropriate action is thought to be desirable and practical are discussed. (MER)

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MEDIA RESOURCES IN CURRICULUM DEVELOPMENT

by

Jack Gillespie

IR009928

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Published and distributed by the
Scottish Council for Educational Technology
Dowanhill
74 Victoria Crescent Road
GLASGOW
G12 9JN

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First published 1980

ISBN 0 86001 020 6

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Foreword

This report has resulted from a project jointly mounted and financed by the Scottish Council for Educational Technology (SCET) and the Council for Educational Technology for the United Kingdom (CET).

The report was completed and accepted by the Steering Group at the end of August 1979. Each of the bodies, whose operation is described, has had the opportunity to verify what has been written. The reader should therefore bear in mind that the descriptions of organisations was judged to be accurate at 1st September, 1979. Since that time there may have been changes.

The opinions expressed in this report are those of the researcher and may not necessarily be those of either SCET or CET.

Preface

Because of the network of interacting agencies affecting the use of media resources in curriculum development the report should be studied as a whole so that the various elements are seen in the context of the total situation.

The investigator wishes to thank all with whom he has been in contact for their kindness, convictions and constructive criticism.

A. Introduction

1. REMIT

To investigate media resources in curriculum development with particular reference to projects in secondary schools initiated by the Scottish Curriculum Development Service; how national working parties integrate media resources into their projects and how schools tackle the media elements. This involves consideration not only of the problems of the production and availability of media resources at national level but of their function and use.

2. THE INVESTIGATION—SCOPE, OBJECTIVES, MEANS

(a) *Scope.* There is a vast amount of activity relating to media input to curriculum development at different levels in the Scottish system and undertaken by the Scottish Curriculum Development Service (SCDS) and other agencies such as, for example, the Inspectorate, the Education Authority Advisory Service, Colleges of Education, the broadcasting authorities, the Scottish Council for Educational Technology, and the schools themselves. A detailed study of the different agencies outwith the schools, in relation to their own remits and objectives, apart from the curriculum development service is outside the scope of the present investigation. But it is essential that we keep in mind the problem of media input as a unity of elements and look at the different agencies insofar as they have relevance to the review.

The investigation is primarily concerned with media input to secondary school curriculum development as promulgated in the four national curriculum development centres in SCDS. But as teachers, education authority advisers, H.M.I.'s and members of other supportive agencies are involved in the activities of SCDS, it is appropriate to survey their working relationship with SCDS and the nature of the involvement of the agencies which they represent.

Within the terms of the remit the definition of content is precise. It is *not* concerned with educational technology as a systematic approach to designing and evaluating learning and teaching methods and methodologies. It is concerned with only one aspect of educational technology and at one level of the Scottish educational system—media input to curriculum development at national level.

(b) *Objectives.* The main objective is to identify, through a study of SCDS and its working parties, the influential factors which affect media input and to offer suggestions based on the conclusions of the review. These are designed to facilitate the availability and integration of appropriate media in national projects and to further their implementation in the schools.

(c) *Means.* The investigator reviewed the activities of SCDS through discussions with directors, assistant directors and other members of staff. He attended meetings of national working parties and had discussions with members on all aspects of media problems relating to the working party system.

Secondly, he visited twenty subject departments in urban and country secondary schools involved in national curriculum development projects and received statements from head-teachers, assistant head-teachers and classroom teachers piloting and implementing national projects.

Thirdly, he had discussions with or received statements from members of different supportive agencies involved in curricumum development at national level.

3. CONSULTATIVE COMMITTEE ON THE CURRICULUM: COMMITTEE STRUCTURE

In explaining the system of curriculum development in Scotland it is appropriate to begin with the Consultative Committee on the Curriculum (CCC) and its committee structure as it is constituted at the time of writing. The CCC is responsible for key committees and for the Scottish Curriculum Development Service. It is not a statutory body but has been appointed by the Secretary of State for Scotland to provide him with advice on the primary and secondary school curriculum.

The CCC's remit is to identify all those aspects of the school curriculum which call for special investigation and, with the approval of the Secretary of State, to appoint working parties and committees to carry out such investigations. It is also obliged to maintain general direction over the national curriculum development machinery, including the standing committees with responsibility for major subject areas of the curriculum, including the four curriculum development centres, and the primary education support service.

The following subordinate bodies work to the CCC. There is the Steering Committee which is the "inner cabinet" of the CCC and determines how resources may be allocated in accordance with the priorities of the CCC. Another small standing committee, the Appointments Committee, is responsible for making recommendations about membership of committees on the basis of advice received from a large number of bodies.

Two important standing committees, the Committee on Primary Education (COPE) and the Committee on Secondary Education (COSE) have an overview of these sections of the curriculum and make recommendations about a possible areas for curriculum development.

Although the investigation is concerned with secondary education, the situation in primary education should be stated briefly. The Committee on Primary Education (COPE) is responsible for the whole of primary education. It has seven sub-committees which deal with different aspects of the primary curriculum and it has the support of three curriculum development officers at Callendar Park College of Education, Falkirk. The appointment of a director of a curriculum development centre for primary education is pending.

The Committee on Secondary Education (COSE) was established in 1977 and co-ordinates the work of the eleven current central committees. It also considers the development of those subjects and aspects of the curriculum which are not currently supported by a national curriculum organisation.

The remits of the central committees on English, Modern Languages, Mathematics, Science, Technical Education, Social Subjects, Home Economics, Music, Business Subjects, Religious Education and Physical Education are confined to secondary education. These central committees are responsible to COSE and promote curriculum development in their appropriate subject areas.

This has implications for curriculum development projects because the procedure is that, if a central committee wishes to set up a new project for which it has responsibilities, it has to submit this to COSE which then has to adjudicate on various proposals for projects which come to it from the central committees.

4. THE SCOTTISH CURRICULUM DEVELOPMENT SERVICE (SCDS)

SCDS is one of the executive arms of the CCC and comprises four national curriculum development centres and the primary education

support service. SCDS undertakes curriculum development work requested by the CCC, by COSE and its central committees, and by COPE and its sub-committees. It is with the developmental work of SCDS that the present investigation is chiefly concerned. The SCDS also assists other bodies or groups by offering advisory and consultancy services and by assisting with the production and dissemination of curriculum materials.

Responsibility for SCDS is devolved by the CCC to a Development Service Committee (DSC), which, together with COSE and COPE, concerns itself with and considers the financial possibilities of suggested projects. To implement accepted projects there are the four national development centres for secondary education, now named in relation to their locations, not in relation, as before, to the subject or subjects for which they have responsibility. In June 1979 the CCC agreed to the setting up of the Service Liaison Group to co-ordinate SCDS. This is a group set up under the secretaryship of the CCC, which comprises, with the four Centre Directors, a representative of the Primary Education Support Service, the Secretaries of COSE and COPE and certain members of the CCC secretariat.

The Centre for Information on the Teaching of English based on Moray House College of Education, Edinburgh, the Centre for Social Subjects at Jordanhill College of Education, Glasgow, the Centre for Mathematics, Science and Technical Education, at Dundee College of Education, the Centre for Modern Languages at Aberdeen College of Education, are now named the Edinburgh Centre, the Glasgow Centre, the Dundee Centre, the Aberdeen Centre respectively. This is in line with present policy to try to avoid too strong an association between a centre and a particular subject or group of subjects to the exclusion of other areas of the curriculum. The line of argument is that the former structure and nomenclature served certain subjects very well. These subjects had central committees and development centres and thus it was possible for them to receive the advantage of national curriculum projects and they had on the whole the monopoly of resources that were available at that time for curriculum development.

Thus there has been an attempt, with potential repercussions on structure, staffing and resources, to establish a new national pattern whereby four national centres may provide a co-ordinated curriculum development service covering the whole curriculum. This does not mean, however, that the individual centres will become all-purpose centres; nor that they will service a limited geographical area. They will continue to have national

responsibilities and to service those subjects and areas of the curriculum for which they are presently responsible and they will be given additional commitments as the service expands.

An example of a major new initiative involving the service stems from the speech of Mr. James Callaghan in October 1976 at Ruskin College, when he questioned whether education was serving satisfactorily the needs of our industrial society From the national debate that ensued there came such initiatives as the Schools Council Industry Project in England and the Education for the Industrial Society Project in Scotland under the aegis of the Consultative Committee on the Curriculum and the Scottish Committee for Schools/Industry Liaison. It is a five-year project lasting until 1982, into which all the SCDS will be progressively drawn in relation to the distinctive contribution which each can make.

The word "distinctive" reflects differences among the national centres seen in staffing structures and resources which must be examined in this report within the context of quantity and quality of resource support adequate for realistic national commitment. To one, who for the first time, has made a close study of the centres, differences become increasingly apparent and explicable when one looks at factors of historical background and development. This analysis is necessary to understand the degrees of use of media resources in curriculum development.

5. THE FUNCTIONS OF SCDS

To try to understand the relationship of media resources and the work of SCDS, one must look at how the system operates. In carrying out the policy laid down by the Consultative Committee on the Curriculum, the service has definite functions and it is within the context of these functions that one must seek to explore the educational use of media.

The first major aim of the service is the *provision of information.* This embraces the collection and dissemination of information on relevant developments in the U.K. and overseas; the issue of bulletins with national circulation about local and national educational thought and activities; the collection and distribution of lists of books, relevant printed material and other aids to teachers; provision of a reviewing service for pamphlets, books and films; the issue of occasional papers on aspects of curriculum development at the request of an overseeing committee, and of explanatory information about the services and activities of the centres. To effect this first major aim, it will be seen that adequate facilities for quality printing on a considerable scale are necessary.

The second major commitment involves the *development of teaching resources*. This includes the collection, processing and, subject to copyright clearance where necessary, the dissemination on a national basis of materials of all kinds prepared by national and local curriculum groups; in association with other agencies, the collection and processing of data required in the assessment of these materials and the collection of sources of information and teaching materials to support particular projects. This is a second major commitment with a concern for resources which relates to the present investigation.

The third major area of the centre's remit is that of *curriculum development and experiment*, and co-operation with local centres and teachers groups. This is designed to promote and support, where authorised by management committees, the initiation of curricular developments in co-operation with education authorities, colleges of education and other agencies. It is because of the implications of this remit that the present review has involved discussions with those agencies external to this service which are concerned with the production or use of media resources in curriculum development.

6. WORKING PARTIES

The centres mostly plan and implement their projects through a system of sub-committees, steering groups and working parties set up nationally under the aegis of the CCC. These undertake the detailed planning for future developments in the curriculum. The chief criteria of membership appear to be professional experience and expertise at responsibility levels in education.

When the composition of national working parties was being decided in the early 'seventies, it was felt that major elements should include "strong teacher representation as a source of practical ideas for the solution of teaching problems", and the presence of college of education lectures.

The number of members in a working party normally ranges from eight to twelve. For example, in the first Geography Working Party of eight members, set up to consider the form of the Geography syllabus in the first two years of Secondary school, there were three teachers, four college lecturers and an H.M.I. as Assessor. In the working party set up to devise a new syllabus for Technical Education (III and IV), of the eleven members there were five teachers, three college of education lecturers, two regional advisers and one H.M.I. With the development of education

authority advisory services, more advisers became involved in the activities of national working parties.

Examples of the aims and objectives of more recent working parties and steering groups are as follows. The National S1/S2 French Working Party working from the Aberdeen Centre has a remit from the Scottish Central Committee on Modern Languages

1. to investigate the conditions in which French is taught in S1 and S2 in Scotland;
2. to prepare a French course for the full ability range for two years work;
3. to consider the implication of this French course for work in S3 and S4.

A steering group was set up by the Scottish Central Committee on the Social Subjects (SCCSS) based at the Glasgow Centre to pursue a project called Integration in Social Subjects in S2. The idea was to allow about six schools in different parts of Scotland to devise their own programmes of integration in social subjects. The steering committee exercises an overview of the nature of the programmes, establishes liaison with the schools and provides the schools, if they so desire, a minimum support in terms of resources. It is a two year programme, and the actual experiment takes place in the summer term of 1979.

Again, a different approach may be seen in the work of the sub-committee based on the Dundee Centre which, on behalf of the Scottish Central Committee on Mathematics, Science and Technical Education, took responsibility for a Modular Course in S1/S2 in Technical Education. The sub-committee devolved the actual writing of modules to working parties of teachers in various regions, each concentrating on different aspects such as Technology and Integrated Craft and Design.

The basic approach to curriculum development has been a grass roots one, operating through working parties of which practising teachers have been a substantial part. It is a system dependent on the willingness of schools to release people to serve on working parties and for them to be prepared to do quite a lot of work in their own time. The hope has been that by this means the materials that are generated will have credibility with class-room teachers. It is also very dependent on co-operation with other agencies within the system which have an important contribution to make. These are indicated in the next six sections of the Introduction.

7. THE INSPECTORATE

HM Inspectors have always had a responsibility in relation to curriculum development in Scotland. Prior to the reconstitution of the CCC in 1976, and its assumption of responsibility for curriculum development, the Inspectorate led and in certain cases dominated the curriculum development activities of the Scottish Education Department's Central Committees. Within the new Scottish Curriculum Development structure HM Inspectors have assumed a less public role but they still contribute directly as members of Central Committees of the CCC and of its executive sub groups, and as assessors of the Management Committees of the Centres.

8. COLLEGES OF EDUCATION

The Scottish Curriculum Development Centres are situated within the precincts of the colleges of education in each of the four main Scottish cities. The colleges have media and teaching resources departments although they may be differently designated, e.g. Audia Visual Media Department or Resources for Learning Department. Television production facilities are available at all the colleges.

During the last eight years appropriate subject lecturers and members of the media resources departments in the colleges have contributed to the activities of SCDS. Nevertheless the fact must be recognised that the capacity of the college media departments to give the measure of timely help that SCDS needs for a full national commitment is naturally limited by their own increasing commitments and by their prior responsibility to the demands of the colleges. This said, the media departments of the colleges of education continue to contribute a degree of support in the field or media The contribution is indicated in more detail in section II of the Report.

9. EDUCATION AUTHORITY ADVISORY SERVICE

The nature of this service differs in the various Regions. For example, Strathclyde, Lothian and Grampian have Advisers in secondary as well as in primary subjects. Others such as the Border Region and Dumfries and Galloway have Advisers only in the primary field.

Generally the aim of the Advisory Service is to give advice or information on appropriate methods, materials and organisation to teachers where there is an expressed need. Advisers help to make resources, including

media resources, available to schools in their region. They also participate in curriculum development through liaison with other agencies, such as the Inspectorate, the colleges of education, the Scottish Certificate of Education Examination Board and the Scottish Curriculum Development Service. As the Advisory Service includes among its functions the development and management of resources centres, it will be seen that its impact on the problem of media resources in curriculum development is significant.

Many subject advisers have participated in national projects sponsored by SCDS at the planning stages as members of national working parties and steering groups, and also at the piloting and implementation stages of projects at local level in the schools. It should be stressed that the remit of the local authority adviser is to operate at regional level with a specific regional commitment, but the importance of his "slot" within the national system must be realised.

10. BROADCASTING AUTHORITIES

A study of BBC and IBA annual programmes of radio and television broadcasts for 1979–80 provides an impressive contribution in support of both primary and secondary education. In a United Kingdom context there are programmes in the secondary field, the area of our investigation, covering Careers and Guidance, English and Drama, General Studies, Geography, History, Home Economics, Humanities and Social Studies, Mathematics, Science and Technology, French, German, Italian, Russian, Music, Religious/Moral Education/School Assemblies. It illustrates a formidable commitment whose quality in past years has been universally acknowledged.

However, in a Scottish context, the picture is a limited one. For example, from a U.K. provision of about seventy series for secondary schools, BBC Scotland offers ten secondary series planned and produced in Scotland. ITV productions originating in Scotland are roughly 7% of the total IBA educational output. There are many important subject areas of the curriculum for which Scottish series do not provide media support.

There is evidence that the curriculum developers at national working party level and the national broadcasters are beginning to look at ways in which the input of media can be increased and integrated in a more meaningful fashion into curriculum development. This is confirmed by the establishment of regular meetings, sponsored by the Scottish Council for

Educational Technology, through which the directors of the SCDS can develop a closer working relationship with the broadcasters.

A fruitful result of this co-operation is seen in a few series. One such is the BBC series Geography for Secondary I and II. Others are O-Grade History for pupils aged 14–16 and the radio series "Living with Others". The geography programmes are intended for pupils following the syllabus on geography prepared by the Working Party responsible to the Scottish Central Committee on Social Subjects. Future programmes in this series are directly related to units of the syllabus—for example, Earth Forces; the Crowded Lands; Resources; the Environmental Problem; Weather and Man; Farming; Industrial Landscapes; Settlements and Communications. The co-operation between curriculum developers and broadcasters has resulted in this radio series achieving the highest radio listening figures of any secondary radio series broadcast to Scottish schools.

Another example involves the Scottish secondary schools radio series "Living with Others". In this case the BBC radio producer prepared five programmes linked to the national curriculum development project "Living with Others—Rules and Responsibilities", planned and prepared by a Joint National Working Party set up by SCCSS and the Crime Prevention Committee of the Secretary of State.

The teaching and learning materials deal with the following topics—Bullying, Truancy, Theft, Vandalism, Disorder on Public Transport, Football Violence, Drinking. The BBC was actively involved with the working party in preparation of the media input.

In the context of the total school curriculum and of the total range of broadcast series, such active co-operation is minimal. This is an area of media input to curriculum development whose implications, in the interests of the national broadcasters, the national curriculum developers and the schools, requires further study and development. The meetings of directors of national centres and members of the broadcasting authorities are a springboard for implementing common objectives.

11. SCOTTISH COUNCIL FOR EDUCATIONAL TECHNOLOGY

The Scottish Council for Educational Technology (SCET), set up under the Companies Act 1948 to 1967, has defined objectives. These include "the promotion and application of educational technology in its widest sense throughout education and in commercial and industrial training";

also the promotion of a wider understanding and knowledge of film and related media in their artistic and cultural aspects at all levels of the community. These objectives connote a co-ordinating role between individuals, institutions and authorities to help contribute to the development of communication in training and learning systems. They also mean support where possible for institutions and organisations that can provide access to media in education and in the community.

SCET aims to implement its objectives by appropriate provision of information, advice and services to promote the most effective use and management of educational technology. Its Information Service provides teachers, training officers, interested individuals and institutions with information regarding all aspects of educational technology. For example, data files are made up and constantly up-dated on audio-visual hardware and software. There are available journals, reports, books and publications from national and international bodies providing background information on developments and techniques in the field of media. Staff with specialist subject backgrounds comprise an Advisory Service committed to particular developmental areas of educational technology.

There is a close relationship between SCET and SCDS. The latter draws upon SCET's Information Service and its Advisory Service. The relationship is also maintained through SCDS membership of various SCET committees, steering groups and working parties. SCET has regular meetings with Centre Directors at which the Inspectorate is represented. It is also responsible for regular meetings convened to bring together SCDS directors and representatives of the national broadcasting authorities. SCET is only one among a variety of agencies in Scotland with a contribution to make to media input to curriculum development but its supportive and co-ordinating role is a significant and developing one.

12. PUBLISHERS AND NATIONAL CENTRES

During the past few years publishers have become more interested in media products and multi-media kits. This development is more marked in England and Wales where there has been increasing involvement with curriculum development in School Council projects. As yet, in Scotland, involvement by publishers in curriculum development at national level, especially in the field of resources, is small, although there is a growing interest and a desire to be involved in a more meaningful way. It is significant that publishers are also showing keen interest in the products

of micro-electronic technology and in their possible impact on education in the future.

In Scotland a mechanism for increased co-operation would appear to be the relationship of the Educational Publishers Council (EPC) and SCDS. The helpful meetings between HMI's and EPC should also contribute towards more involvement. In England and Wales the Schools Council approaches EPC at a stage when publication of a project is contemplated and invites publishers to view the material prepared to date and to tender for publication. Till now the approach in Scotland has been less structured and a problem arises from the fact that when publishers have been approached, work on a project has usually been at quite an advanced stage. This relationship will be an area of discussion in section III of the Report.

13. SUMMARY

From the introduction, it will be seen that there are many agencies in the field of media input to curriculum development. Overemphasis on any one might tend to falsify the balance of contributions, all of which are necessary. The priority need appears to be an awareness of how, in accordance with its own remit, aims and objectives, each may maximise its particular contribution in terms of informed thinking about and applied practice in media input.

B. National Curriculum Development Centres

ABERDEEN CENTRE
DUNDEE CENTRE
EDINBURGH CENTRE
GLASGOW CENTRE

ABERDEEN CENTRE

The academic staff of the Aberdeen Centre consists of a Director and an academic assistant in charge of general curriculum development commitments. There is also a full-time librarian, a full-time graphics artist/photographer (supported currently by two short-term contract graphics artists), a part-time printer and a small clerical and typing staff. An appointment to the Centre staff of an audio-visual expert at professional or technical level has not been authorised. Nonetheless, the Centre manages, by co-ordinating the work of its academic, graphics and printing staff, to carry out most of the procedures related to its work. When, however, the extent and availability of full-time professional staffing is measured against the required degree and quality of national commitment, it is not surprising that, at times, external support is needed in areas such as graphics, printing and media resources. The implementation of developmental work in modern languages has included projects such as the structuring of non-certificate teaching materials in French and German and now the development and the piloting on a national basis of S1/S2 French materials for teaching across the ability range and of Spanish materials for SCYS and Higher grade work. The Centre also distributes assessment materials for Higher grade French and German. A second area of Centre work concerns the dissemination of information: in this connection there is a library and information service and publications include "Modern Languages in Scotland", the Journal of the Scottish Central Committee on Modern Languages, published at the Centre three times per annum, bibliographies for CSYS topics and working papers and reports by SCCML.

In the last decade, due to an ever-increasing emphasis on the oral and aural elements involved in learning and speaking a foreign language there has been a growing involvement at Aberdeen Centre with media resources.

An interesting side-light on the inherent demands of one subject area as against another is the greater number of references to audio-visual materials and techniques in the literature of the Aberdeen Centre than one finds in some other publications on curriculum development during the last seven years. Indeed, two journals were entirely devoted to the study of media resources and technology, and references abound in most of the Centre's publications to audio-visual materials and techniques.

In the Centre there exists a complex of audio-visual equipment which can handle limited amounts of production for developmental work, recording equipment to record and copy schools broadcasts, and a small recording studio which can accommodate three people at most. If more are required, the Centre depends on assistance from the Aberdeen College of Education television and recording studio. The demand for photographic slides, significant in developmental work, and for their reproduction on the printed page, is met by a modest range of equipment—slide duplicators, enlargers and a repromaster process plate maker. Three Pentax cameras are available for producing originals. A 1250 Multilith off-set machine handles print materials.

The Centre utilises a range of media resources, e.g. photographic stills, slides, filmstrips, OHP's, drawn visuals, flashcards. These visuals are used for a variety of purposes relating to the teaching and learning of modern languages but it would be broadly true to say that they have two functions. Firstly, they act as mediators of the meaning of foreign languages and as cues to language activities in the classroom. In this connection drawn visuals in the pupils' printed materials and on flashcards are supplemented by coloured drawings projected in slide or filmstrip form. Secondly, they help to bring the foreign country into the classroom as vividly as possible: black and white photographs in the pupils' book serve this purpose but the most effective vehicle for it are projected coloured photographs which have an attractiveness and an ability to focus attention that the black and white photograph does not possess. The use of more sophisticated media resources is always under scrutiny by the Centre within the context of the logistical and financial problems posed by them. Overall there is an acute awareness of the significance of media resources in teaching and learning a foreign language.

Historically, in modern languages, there has been a more than average reliance on tape-recorders and projected visuals, reflected for example in the use of a reasonable amount of BBC television, radio and radiovision programmes and in the widespread use of commercial audio-visual

courses. Nevertheless, across the teaching profession there exists uncertainty and confusion about the use of media resources as an INTEGRAL part of modern language teaching and learning, an uncertainty so widespread that experienced observers of this area of the curriculum concur that the audio-visual decade has not been a successful one. The Director states "I have the impression that teachers are less confident now than they were a decade ago, that machinery is the answer. It is going to be quite difficult to persuade teachers back to the point where they might begin to think of using machinery more selectively than at the outset of the audio-visual era". Fortunately, there exists evidence in statements by practising language teachers made during the present investigation, statements which will be quoted in the section devoted to opinions and convictions within the schools themselves, that if less machinery is used now than in the heady days of experimental anticipation, the present use is being shaped by more developed and informed attitudes and that the Aberdeen Centre is making a significant contribution in this respect.

The uncertainty about the place of media resources in teaching and learning situations in modern languages may be seen in differing attitudes within national working parties. For example, there is evidence of much sophisticated and positive thinking about media resources by the working party constructing the French "Tour de France" materials aimed at all levels of ability in S1 and S2. But in the case of another working party writing non-certificate French materials, it was surprising to find that there was almost total resistance to media which was the more surprising because the materials focussed primarily on France and the French way of life, with language playing a secondary role. Their almost unanimous view was that there was little chance of teachers using the visual material for two reasons: firstly because of inadequate provision of equipment and secondly because disciplinary problems tended to arise—in other words it was easier to deal with a class working in a traditional print orientated fashion than to get discussion going on the basis of a filmstrip. However, in discussions with classroom teachers during the investigation, the balance of argument was identifiably in favour of opposite convictions.

The Aberdeen Centre emphasises one major factor which will vitally affect the use of media resources in language teaching and learning situations—the extension of interest in "background" as it relates to language learning in the comprehensive "whole-ability-range" situation. One approach aimed at pupils who have difficulties with foreign language acquisition has been to shift the emphasis in courses heavily towards the study of

"background", sometimes to the virtual exclusion of a language component. The Director states, "We want to present the foreign country as vividly as possible in order to motivate pupils' interest and, incidentally, to provide opportunities for the use of the native tongue in a modern language classroom in ways which are educationally justifiable. This is important because some of the pupils will find a background component one of the elements of a language course with which they can deal with relatively greater confidence. On the other hand, the justification for introducing background is essentially that it helps the pupil to learn the foreign language. It does this in two ways: in a given unit of work we can introduce the subject matter through the background in English and then present it again in French, thereby helping the pupil to understand the French more fully. Secondly by introducing an interesting and vivid background element we can gain his interest and make him believe in the reality of the world whose language he is using. Ideally one would like to introduce this background through the moving visual, but this hasn't been done yet and we are still concentrating on slides and filmstrips. We would also like to use the overhead projectors more fully and have more material on the walls in the form of pictures and charts. Certainly there has been a desire in the S1/S2 Project to include as wide a range of visual material as schools can use."

It is apparent that much thought has been given to the question of media resources both by Aberdeen Centre itself and by the working parties with which it has been associated. Clearly there are problems to solve in the face of differing attitudes to, and skilled knowledge of, the use of media among language teachers as a whole and to a lesser degree even within working parties. Media resources, whether in relation to audio visual courses or BBC broadcasts, are often used less effectively than they could be and indeed sometimes they are not used at all, the Director suggested. This points to the urgent need for a concentration on the improvement of resource organisation within schools and to the equally urgent requirement, at school and other levels, for increased in-service attention to the pedagogical uses of media resources. The Centre emphasises another factor working against media—a factor which is related very intimately to language in its aural–oral dimension. This is that the curriculum as defined by the Examination Board is still largely unrelated to these activities. Despite changes there is still a tendency towards concentrating on those things which get pupils through the exams and those things, some argue, are best communicated by chalk and by talk, and by books and jotters. Until the curriculum changes radically—so far it has changed in one particular sector only, that of the alternative "O"-

grade exams, which are largely aural/oral, but are still a minority objective—it is felt by the Centre that the media may tend to be ignored because they do not directly contribute to skills that constitute the main objectives of the examinations. It is velieved that such factors are more serious than any difficulty in using sophisticated equipment which is seen as probably one of the least deterrents.

Centre and College of Education

In examining problems posed by media resources in the national centre, one must look at the degree to which centres are dependent upon the resources of colleges of education. Because of priority commitments of the colleges' media resource departments, their support is necessarily conditional and therefore limited. Aberdeen Centre gets support from the college Teaching Aids Department in photographic assistance, in the duplication of slides and in the borrowing of equipment. Help is obtained also from the Television Unit in the production of the audio side of the S1/S2 French course. But by and large Aberdeen Centre does not use its College of Education to the extent Dundee Centre does, for the simple reason that, in certain respects Aberdeen College does not have the resources that Dundee College has. For this reason the Aberdeen Centre has had to establish the best in-plant capacity it can—although by professional standards in part inadequate—to do its printing and plate-making, to do the bulk of its photography, and to do all its graphics by means of hiring in free-lance graphics artists or making short-term contracts. The Centre possesses one permanent full-time graphics man and to deal with the S1/S2 Project it uses four others almost full-time. The investigation shows that a relationship with a college of education resources department is an *ad hoc* aid, acceptable and useful, but from the nature of a college department's separate role and priorities it has not been proved to be a permanent answer to the basic lack of media resources facilities necessary for an adequate, professional structure of curriculum development which a national centre ought to possess. This fact is substantiated by the experience of other Centres and by statements made by colleges of education resources department members.

Scottish Council for Educational Technology

Aberdeen Centre believes that an organisation such as the Scottish Council for Educational Technology can help by acting as a clearing-house for information and informed opinion on matters relating to

educational technology. Thus it can provide the sort of survey that the magazine "Which" provides with listings of qualities attributed to different technical units, on the basis of expert analysis and consumer opinion. It realises that no organisation can commit itself to value judgements on different types of equipment. Trying to get information on language laboratories proved this. Indeed the Centre decided to have no more to do with hardware information recommendations once the Scottish Council for Educational Technology was set up because it regarded anything the Centre could do to process relevant information and attempt assessments, the Scottish Council for Educational Technology has, theoretically, the resources to do better. The Centre believes with the other Centres that it would be useful if a SCET presence was available as near the beginning of a national project as possible to be ready with appropriate advice and information on aspects relating to media problems. What is evident, and here Aberdeen Centre says "Amen!", is the need for a viable production agency to give speedy support to working party decisions on resources in a national context, the realisation that a professional approach is essential in working out effective alternatives in the timed phasing of scripting and matching media resources. A working party of subject specialists alone cannot do this. A study of the structure of national working parties ultimately forces us to consider the need for a national curriculum development service self-sufficient in the full curriculum development cycle.

References were made during interviews to the Scottish Council for Educational Technology. At this point I shall restrict references to those relating to the Aberdeen Centre. The Director says: "I think SCET and we have to learn how to work together. They have a lot to learn of the nitty-gritty business of specific projects and their problems, and we have to learn what they have to offus us. I'm glad to say it's gradually happening. We're coming together in the sense that we have regular meetings and exchange ideas on co-operative possibilities. SCET evince an increasing interest—most clearly shown in the proposal to set up a production and reproduction agency—to work in co-operation with the Curriculum Development Service."

National Project: French S1/S2

It is worth studying in some detail the national project producing French course materials for the whole ability range in S1 and S2. It has specific aims and objectives which take into account in realistic fashion the weaknesses of the past and the needs of present day pupils taught in a

range of class situations including mixed ability. Indeed it is perhaps one of the most important exercises currently undertaken by the national curriculum development service and a positive analysis of its problems reveals valuable pointers for other attempts to introduce virtually new approaches, such as we have, for instance, in the national project Integrated Craft S3/S4 sponsored by the Dundee Centre.

It is essential to be clear about what the National S1/S2 French working party is attempting to do. On the generally accepted proposition that French for the full ability range which has been tried in schools for the last few years has not been a success, the working party addressed itself to the task of formulating aims, objectives, supported by print and non-print materials that "reflect a more appropriate balance between innovatory thinking and the realities of everyday classroom experience".

What strikes one about this project is the vast amount of detail thinking and extensive writing that has gone into the implementation of specific aims and objectives over the last few years. Indeed where it perhaps differs from other courses is in the degree of explicitness with which its aims are stated and it is to the credit of the working party that they have accomplished so much during the pre-pilot stage despite extreme pressures of time on practising teachers operating under the present working party system. Materials are supplied to fulfil five specific aims and these include diagnostic tests within each unit of work as well as attainment tests to check on the extent to which pupils are progressing in language over a number of units taken together. The first aim is that "all pupils whatever their initial language aptitude should attain worthwhile levels of performance in French". The second, "all pupils, whatever their initial language should develop aptitude, interest and spontaneity in using French for a variety of practical communicative purposes". The third, "all pupils should develop an understanding of what it is like to live in France", and in relation to this third aim, one sees the total relevance of a maximum input of appropriate audio-visual resources.

The fourth aim, "all pupils should develop their sense of language awareness". This involves ear-training, precision, expression, analysis, relativity (English words are no more "real" than French ones in that words are not inherent properties of the objects they describe), interpretation (languages influence each other), social relationships. The fifth aim is that all pupils develop their ability to learn, which must be one of the fundamental aims of any common course. This involves concentration, memory training, reference, comparing and contrasting, gist extraction (extracting the basic message), self-reliance, co-operation. The

attitude of the working party is creditably pragmatic: "If the aims do not prove to be realistic, how can French be justified in a Common Course in comprehensive schools?". It is up to teachers who will be using the "Tour de France" course to decide in the light of experience of using the materials how realistic are the aims and objectives of the working party. The pilot stage of the experiment involving schools begins in the autumn term of 1979.

Before discussing the use of resource materials for the project, it may be worth commenting on the emphasis put by the working party on "paired" work, as it may well apply to other learning situations. With the emphasis in the future on oral work it is important that pupils should have the greatest opportunities to talk to each other as well as to the teacher, with lots of practice in speaking and listening. If all talking is monitored by the teacher, the pupils will not receive enough practice. Paired work is relatively easy to organise. There is no need to move desks around; all pupils can remain seated, facing in one direction; discipline may be rendered easier; it is easier to move from a whole class teaching situation over to this format for a couple of minutes, then easily back to whole class teaching. Paired work can of course be carried out even when group work is familiar. The argument for paired work is equally strong in both areas. "There is definitely no intention to discourage group work, with groups of four or more pupils. On the contrary. But it is an established fact that the majority of teachers make little use of group work at the moment and therefore the working party feels it appropriate to recommend strongly only a modest step in that direction, by opting for work in pairs." This fact is worthy of mention because it has significant implications for the use of media resources appropriate to the teaching structure and is a powerful reason for professional expertise in media available as an integral part of working party planning which can relate to the organisation of teaching situations.

The main audio-visual materials for "Tour de France" (designated title of French S1/S2) are tape, filmstrip and flashcards to support and supplement the pupils' book containing a double-page spread with language presentation dialogues for the appropriate topic, with a selection of accompanying visuals. There is a double-page spread (or more) giving the new vocabulary for the particular topic. The headings for these teaching points correspond to the objectives of the topic as given in the green pages of the pupils' book. When one sees the evidence of the fruitful and organised thought of this working party, the regret is for what additional benefit could have been added to the project through the

constantly available presence of a full-time media expert and through adequately financed media resources fully integrated into the language programme. The absence of film and video* is partly due to the stated belief that these more costly media, with their additional logistical difficulties for the schools, might involve counter-productive elements making the total teaching and learning situation more difficult, and that at this stage it is more realistic to keep things "simple". The working party thought that perhaps only one overhead projector might be available in each school situation which would be difficult to use at the right moment and on a regular basis. Thus they decided that materials suitable for use with the overhead projector must be optional or supportive and could not be included as essential materials for which in their experience there was a more adequate supply of hardware in schools, viz. materials for slide projectors. That other media, including film and video, are used extensively by some language teachers is illustrated in a film on Modern Languages made at the time of the raising of the school leaving age, but it is recognised that this practice is not universal.

The magnitude of the problem of the integration of curriculum and resources in working party programmes is so little appreciated that it is probably worth relating it to the Project French S1/S2. What is so praiseworthy in this case are the efforts of the working party to relate in detail what limited media resources seem to them to be practical in the current situation to their educational aims and objectives. This was done on the principle that EXPLANATION should precede LANGUAGE USE, that pupils should meet the new language in context, before having it explained to them. In the past too much language was perhaps thrown "cold" at the pupils. Visuals are not designed primarily for teaching the meaning of new words but rather as a means of providing a realistic setting for the presentation of language. Richard Johnstone, the convener of the working party says "The weaker pupils might derive greater benefit from a quick out-of-context look at the teaching points, as illustrated by the flashcards. You would implicitly be saying to your class 'Here are the pictures of some of the new words that you will soon be meeting in the story for this topic. Before we look at the filmstrip, let's have a quick look at these new words, one by one, on the flashcards....' This means that when you move on to the filmstrip/tape sequence, your class will not be trying to infer the meaning of masses of new words which

*Discussions on the possibility of TV material related to "Tour de France" have been begun with the BBC.

they are encountering for the first time. Instead, they will be trying to recognise those items that they will have already seen on the flashcards." This is a good example of an attempt to integrate media resources and curricular programme.

The production of even limited media resources demands a quality of professional expertise that at present is not part of the Scottish curriculum development service. Again, let us illustrate this from what would appear at first sight to be the relatively easy task of making photographs for project French S1/S2. The problem demands a basic understanding of the need for a very high degree of co-operation between the scriptwriter or author(s) of the programme content and the photographer who will take the photographs which are to be an essential element of the teaching and learning unit. For complete and successful integration there must be close teamwork between a programme writer in the working party and a professional with media expertise; someone who can not only take photographs of high technical quality but is looking at his pictorial subject through the eyes of the writer and is working in the field with the writer. There is an added difficulty in photographing for the teaching of the French language. An analysis must be made of the difference between taking photographs for teaching subjects in the learner's native tongue and for teaching a foreign language. The picture should help the mind to make intellectual interpretation easier and quicker. But with a photograph of a foreign environment or situation, the brain is trying to make a double interpretation—what the picture conveys in the foreign situation (a railway porter in one country may look like a policeman in another) and the cross-relationship or cross-reference to the known environment of the pupils' situation. Thus in a truly professional situation, the photographer should be working with a scriptwriter from within the working party who has the clearest idea of what mental message the photograph should convey as an integrated element of the script. It is a professional activity that demands unity of thought and action between two people. A photographer on his own, with a script in his pocket, or even with someone who is the most fluent of French speakers but is not a member of the programme-writing team, cannot constitute the best medium in terms of educational integration. Then there is the additional problem of coping meticulously with the logistical and contact arrangements for a foreign visit. Thus if a national working party is requested to produce a course on a foreign language which aims to have maximum educational impact, it is essential that it is adequately financed and professionally staffed to perform this task. Working towards a professional objective, such as that exemplified in the S1/S2 French project, the Aberdeen Centre

is, on the present evidence, working with at least one hand tied behind its back.

At a time of financial stringency it would appear all the more necessary for Central Committees or executive committees to take a much harder look at potential or suggested national projects and, on the basis of national needs, give priority consideration and therefore adequate professional resource support to those deemed worthy of piloting and implementation. But in the present unsatisfactory situation we must look for potential areas of external professional support. A member of the French working party said "In the area of media resources such as, for example, photography or film, the Scottish Council for Educational Technology with their professional expertise have helped generously, although it should be stressed that much excellent photography has been carried out by members of the Working Party and particularly by one member of the CDS who has had professional photographic experience. SCET could be useful to us, for instance, if we were filming or photographing from an English script basically for background presentation. The trouble would be that the member of SCET would have to be well into the French language to get the nuances of meaning to depict specifically some action not for its artistic merit but to convey a language function. It means a close alliance of professional technician and scriptwriter working in harmony." These words focus the issue of professionalism within the working party structure. This is underlined by the words of the same working party member when he says "Out basic problem has been the lack of human and monetary resources but for an 'amateur' group we have probably done quite well. It is just a pity we did not have a completely professional photographer who was able to work closely and constantly in the field with the scriptwriters. The restrictions on us have been considerable."

The working party had discussions including those with some education authority advisers on the integration of media resources. Indeed, evidence shows that after protracted discussion it was agreed that the essential deciding factor was the availability of hardware as experienced by advisers in the schools. There is little doubt that the working party would like to use media such as particularly the overhead projector, also large wall visuals, but they feel this is not possible, firstly because overhead projectors are hard to come by and secondly because you can't have too many formats of visuals in a given package because it would cost too much. Future developments in schools' audio-visual capabilities may make possible the sort of development of materials desired by the working party.

There is another reason why a close study of this French project is fruitful. It not only focusses sharply the strains imposed on the national curriculum development service in its approach to media resources but it also brings into focus the hybrid nature of the service as a part-professional, part-amateur entity expected as a national standard-bearer to emulate fully professional standards. The hybrid nature certainly explains why production standards are sometimes less than professional throughout the SCDS. The investigator's personal experience of totally professional media presentation over 20 years has been a useful touchstone for objective evaluation of production standards of media materials, though it is recognised that the quality of a presentation is sometimes a separate matter from its appropriateness.

What are the facts about the working party's responsibility for the planning and organisation of media resources? These were almost wholly organised by its members. There were areas to which they were forced to turn for help. They consulted the Scottish Council for Educational Technology and received some useful help in the acquisition of photographs. The problems involved in this exercise have been discussed. The people who made recordings were either local French "assistants" or the staff and pupils of the Total oil school. The editing of the tape is done by the college television service but some of it may have to be done freelance because it is proving a long and difficult job. The working party itself was responsible for the production of visual material. They sent members to France, an operation that made considerable demands on time, planning and money. It must be noted that a professional task such as photography had to be undertaken by Centre staff, and by teacher members with some additional help from a member of the Scottish Council for Educational Technology. The Centre acknowledges that working within a challenging and part-time time-table it was not possible to accomplish the task in as sophisticated a way as it would have liked.

A final word on Project S1/S2 from the Director on the need for extra help. He says "The S1/S2 Project has been allocated a research-based piloting officer. Thus we will have somebody for three years who is going to look after the evaluation of this Project, provide feedback on the materials, scrutinise the assessment, provide data on levels of attainment etc. This is a task the SCDS simply could not have accomplished from its own resources." This appointment is to be welcomed but evidence shows that the need for a qualified person with expertise in media, either within the service or provided by an external supportive agency, should have been met at a much earlier stage in the life of the working party. This is

true of most working parties in the SCDS. It is a significant weakness in the system as it relates to the development of media within projects. It is such a situation that forces us in the present stringent economic climate to examine relationships with external potential sources of support to reduce the impact of inhibiting factors within the national curriculum development service and its working party system.

National Centre and the Schools

Visits to schools and discussions with teachers confirmed the general uncertainty in thinking about the function of media resources and their use in the teaching of modern languages. Despite the fact that there is on evidence a minority who are against the use of media, the investigator found that the progressive, soundly based ideas of the national centre during the last few years relating to changing conceptions about the significance of background material had encouraged more constructive thought especially at principal teacher level.

It is worth considering in greater depth the opinions and convictions of some of the teachers interviewed. First, in general terms a picture emerged of how, when a decade ago the hardware of media arrived in the classrooms there was a mixture of expectation and at the same time uncertainty and sometimes fear because teachers did not feel at home with it. Because they were uncertain of the mechanics and of the equipment, how to use it, where to put it in the classroom, how to make it an integral part of modern language teaching, there was little informed consideration of the software and its educational function. There was a tendency in the early days to use commercial materials in a language laboratory without much knowledge of its potential educational value. Published materials were generally of the drill and practice type and many of them were boring to teachers and pupils. Thus a movement started towards schools making their own materials. Later the situation in modern languages relating to media became slightly different from other subjects in that they had an examination which to a large extent depends on the school having a language laboratory because of the alternative "O"-grade examination in foreign languages involving language laboratory tests where tapes and not just papers are handed in. They encouraged many teachers to write their own materials to prepare for speaking on tape. For 1977–78 5358 pupils sat the alternative "O"-grade examination in French and 1288 in German. In the traditional French examination 21,528 pupils were involved and 5069 sat the traditional examination in German. A principal teacher who had 250 pupils sitting the alternative "O"-grade examination said: "We

use tape-recorder and filmstrip and other media equipment a lot. On the whole during the last ten years I think we have learned to use what media resources we have more intelligently and also perhaps because of that, less frequently. If there is any disillusionment or doubt about media equipment, I think it is largely due to the fact that teachers have to share it and have not got it when they most need it and the effort of sharing is so great that it becomes less cost-effective to use it. In a shared situation, equipment such as an overhead, never seems to be there at the right time. It's often somewhere else. Machinery becomes less cost-effective the more it's moved around."

There is heartening evidence of a gradual growth in awareness of the function of resources which the national centre has been endeavouring to disseminate during the last few years. A teacher stated "where we use media resources, we use them now because we could not do better without them. We ndo not use media for its own sake. Take the overhead projector which is a really important resource. We find that the time saved by using one is lost by having to go and find one and set it up in your room by which time you could have written the material on the blackboard. The overhead projector is crying out to be used if we had one available at our elbow all the time."

The investigation points to the fact that availability of equipment is a key issue and that, given availability, teachers would find their own level of use for it. As a teacher stated "It's great to know it's there. I can see it when I want it for the purpose I want it. I know that when I want it, I don't need to waste time and effort looking for it elsewhere."

The attempt by the national working party on French S1/S2 project to develop the portrayal of the country, of the geographical and social environment of the foreign country, was paralleled in some schools visited by the investigator. In one such school over 50% of use of the media hardware, the VTR, and the film-strip projector is used for the presentation of country to non-certificate pupils, what the country and the people look like. A teacher states "We show, for example, streets and public notices. We like to think that through such notices we can photograph grammar because in all these notices there are lots of linguistic learning points. For actual language learning purposes I reckon we use visual material about half the time. Bringing the environment into the classroom is the only thing French and German teachers can't do without hardware. I can teach them without the resources, get them speaking French and German, but I can't let them come to grips with details of what things and people look like in a foreign country. It's a

mystery why any teacher should not recognise the all-important role of media resources in the language teaching of non-certificate pupils."

Another teacher stated: "What some say, that media resources tend to create disciplinary problems, I simply do not understand. The visual rivets kids' attention; it has greater impact, so really it's not media that is a cause of indiscipline; the problem of discipline is there already. If an experienced teacher has disciplinary problems, it doesn't matter if he had or hasn't hardware. It is relationship with the class not the hardware that is the problem." When you find that language teachers who are coping with non-certificate pupils are not wholehearted about media materials and you might even find this attitude at the level of the national working party—there's something fundamental behind it. Deep down I think they reflect an attitude that is perhaps sympathetic to these pupils and that is divorced from educational reality. Who is going to buy a resourced-based course for non-certificate pupils when they've got a lot of people doing 'O'-grades? One must honestly face human attitudes. It would mean more organisation, more work and deep down there is a shying-away in some people from teaching these children. It is difficult to face these things but they must be honestly faced."

Teachers stressed the need for appropriate software. Some made the point that since modern language teaching appeared to be becoming more verbal rather than written, it would be helpful if more materials had plenty of genuine French, German and Spanish dialogues right up to the sixth year level where people are opening their mouths for a purpose. A teacher said, "If you haven't got any really good audio material, who is going to use a tape-recorder? The hardware has no meaning without the right educational software." Another teacher illustrated what the class teacher can contribute if he has the right media resources available. "I was very lucky because I got the use of a mobile recording unit from the university, something you can't get from the teachers centre at the time you want it. I was taught how to use it and it was in my room all the time for a fortnight. I video-recorded myself and the children teaching and learning for two weeks. It was later edited at the university for the use of students. Some of the tape I played back to the pupils to let them see how they appeared in their own situation and to see how they organised themselves, e.g. when they move desks. The university now uses the material when it has conferences and students can go and see extracts of certain types of lessons in action. I just mention this to show what teachers can contribute if they have the right media resources really available in the classroom."

The point recurred that the national broadcasting authorities might provide shorter lengths of programmes materials, say, four minute bits of programme instead of a "solid twenty-minute chunk of teaching programme". Teachers would then select pieces they wanted. A teacher stated "What we want are smaller chunks to aid selection. People would use them more because they're in manageable sizes." It is interesting that this resembles requests that came in to the main media production centre in Germany from local areas in the Länder for short 8-mm films that are more specifically related to local projects than longer, more general 16-mm films. However some teachers had noted the change in BBC modern language radio programmes over the last three years, which had begun to incorporate separate manageable sections usable for listening, for practice and for information according to what is wanted. "There's no reason why in a small country like Scotland the upper echelons of curriculum development and the broadcasting people can't tailor-make media resources that suit the specific needs of teachers."

There was some evidence of a desire for a national or central production unit which could plan relevant resources that were needed in specific areas or for specific purposes. A teacher envisaged a two-tier structure for the supply of resources: "If the national centres or teachers centres can't give us enough of the right kinds of materials then what I foresee in Scotland would be a national centre and also regional libraries or centres striking copies of nationally planned media. This would avoid the central media makers being flooded with requests. Teachers could go to the regional resources libraries or teachers centres whether they're in Edinburgh, Dundee or Aberdeen or elsewhere in Scotland. The central base could be anywhere but the ordinary teacher would have his local base to refer to. The point I am trying to make is that you need an overall view from a central base for national planning and ultimate cost effectiveness. You tailor the national system to local needs just by sheer weight of enquiries and awareness of local production needs."

Another teacher stated: "People teaching a modern language, seeking to return to a paper, book, chalk environment have had it totally. We are in enough trouble getting children to be interested in languages, much less getting them to learn languages, without turning the clock back. The only way we can interest the modern child in languages is by giving him as large chunks of reality as possible, which means filmstrip, video recording, films, radio and television, to interest children in how people in other countries live and talk—by every media means possible. You put the country and its people before you bring in the language. The language comes second."

"People, whether they are members of national working parties or classroom teachers who oppose this concept of language teaching have their heads in the sand. I was in industry and have taught modern languages for twelve years. I'm still in the middle of change and am not convinced I'm achieving very much, but I do know if I was still teaching by chalk and talk, I'd either have retired or have put a gun to my head long ago. We may not be succeeding but we're failing less badly with the modern methods. The tragedy is that we don't have enough progressive, radical thinkers. The reality is it is the Establishment that selects working parties and management committees. They play safe because that is what bureaucracy wants; it is what an education committee wants. What we witness today is a harvest of wrong concepts. We want to be PRESENTING Germany, Spain, France and Russia and the ordinary folk who live there. It is nonsense driving home the present tense of a verb in a vacuum. It is a great pity that the questions your investigation is asking had not been asked long ago and something done about them."

Amongst the modern language teachers that the investigator met many of the apparently successful teachers had opinions which were in line with the convictions of the Aberdeen Centre. Basically that is the surest guarantee of future progress.

Slowly but surely on an ever-widening front the hard realities of teaching mixed ability classes are driving modern language teaching towards the greater use of resources, but what is even more important, to a deeper consideration of the function media in relation to the educational commitment. It is this fact of inexorability which will compel, sooner or later, the appropriate authority to comprehend more realistically the vital needs of the Aberdeen Centre as the national spearhead for modern languages teachers in Scotland. It will involve thinking about issues such as the possibilities—not necessarily alternatives—of the extent to which national centres become self-sufficient in manpower and resources within the total curriculum development cycle of course-planning, methodology, resource-production and evaluation, or can get adequate professional manpower and professionally produced resources from an external national agency or agencies.

DUNDEE CENTRE

The Centre was inaugurated in 1971 and its subject responsibilities at present are mathematics, science and technical education. It is staffed by a Director, an Assistant Director with special responsibility for Technical

Education, five lecturers seconded part-time from Dundee College of Education, covering mathematics, science and educational psychology; a Research Assistant and Information Officer/Librarian. In addition there is a secretary, four clerk/typists, one permanently employed auxiliary and up to five temporary auxiliaries. There is no specialist in educational technology within the Centre. Graphics and audio-visual work is handled mainly by the Resources for Learning Department of the College of Education.

The Centre has three declared functions. The first is an information service on curricular development in the appropriate subject fields; bulletins covering local, national and international activities and projects; the collection and distribution of lists of books and supportive materials for the information of teachers on the services and activities of the Centre. The second function is the development of teaching resources, an area of activity that comes under the scrutiny of the present investigation. This function involves the dissemination on a national basis of materials which national and local development groups have prepared, and the assessment of these materials at a formative stage by the collection and processing of data required for this function. There is a special responsibility for collecting sources of information and teaching materials to support particular national projects, such as, for example, Integrated Craftwork S3/S5. The third function that the Dundee Centre undertakes is one of encouragement, support and initiation (where authorised by the Management Committee) for regional developments in co-operation with regional authorities, colleges of education and other agencies.

In the library the stock of books on audio-visual equipment is limited but there is an adequate stock of books on educational technology in the wider sense involving objective setting and systematic approaches to learning and teaching situations. The Centre holds about 100 kits of package materials which include filmstrips, slides, audio tapes, games, but 16-mm film holding is meagre.

The library services the working parties who require its support and mounts exhibitions at meetings of teachers. There are temporary lendings to teachers or groups. The print stock is about 2000 volumes with many research papers and subject journals.

In the early years of development, the use of media resources as an integral part of curriculum development was comparatively meagre. However, evidence of the investigation shows a growing interest in an increasing practical application of media resources, particularly in the past

year. As in other European countries, mathematics is low on the list as a media user. Science teachers, although probably first in the field with behavioural objectives, objective testing, attainment assessing and a systems approach to learning, have by and large not used to the full the rich media support that is available to them in both broadcasts and commercial software.

Dundee's projects involving media relate chiefly to Technical Education, especially S1/S2 Modular Course and Integrated Craftwork S3/S5. Media resources are mostly limited to filmstrip and slides in Technical Drawing I, Integrated Crafts I, Basic Crafts I, and Integrated Craftwork S3/S4. There has been a growing demand for media material in plastics for Integrated Crafts. Because of the successful national dissemination of published information by the Dundee Centre there exists an efficient vehicle for feed-back to teachers about the effect of media resources coming into use in projects. This is sufficiently significant to comment upon it. The other three national centres produce a bulletin or newsletter, a journal of information which they sell. Dundee Centre from the beginning has sent out free copies of such bulletins to schools in sufficient numbers so that there is one in each department of every school, at least in each department with which the Centre is concerned. It sends five copies of each bulletin to the schools for the three Science departments, for Maths and for Technical Education. The investigation found the newsletter on Integrated Craftwork S3 to S5 is greatly appreciated by teachers engaged in this pilot scheme and it is an obvious vehicle for developing further relevant thinking on media resources in this field. Similar appreciation of other newsletters was expressed.

The secretary of the working party (Integrated Crafts S3/S5) said "A thing I like about the Dundee Centre are the letters they put out, particularly this one on Integrated Crafts. Reports show that it has been an absolute boon in the schools. It keeps everybody up-to-date and we get feed-back from the schools—all the moans and grumbles which are passed on to the sub-committee who do their best to cover the problems." This underlines what has been said about the potential of Centre literature to encourage and disseminate information about media resources that can be successfully integrated in projects.

In the present survey of the Dundee Centre in relation to media resources, two factors in particular emerged:

1. the growing effect of leadership progressively committed to the educational significance and use of media resources; and

2. the realisation by the Centre of the significance of a developing relationship with the Scottish Council for Educational Technology. There is evidence of a more general awareness in working parties of the educational significance of media and this awareness according to the Director, has been aided by strengthened liaison with SCET.

There has been a tendency in the past to limit media resources to still photographs, slides and overhead transparencies. Two attempts to produce more sophisticated media, e.g. film, were not particularly successful although produced with film organisations which perhaps should have been expected to effect a more professional product. The Director says "We have not done very much in the way of producing A-V resources ourselves. What we have done is to ask SCET to help us and this seems to work. I hope to involve SCET more and more from the beginning of the projects. So I don't think there is a need for an A-V producer (resources) in this Centre. We are mostly involving SCET in master-minding and producing our material for us. We look to the future and to the support of SCET in helping to iron out some of our past difficulties. There has been a significant shift in thinking even over the past year regarding media resources. This may be partly due to SCET's move to become more directly involved in supporting curriculum development.
We have now a number of projects in which they are quite heavily involved in producing media materials of various kinds and this has not happened before. Undoubtedly at the Dundee Centre there has been a significant change in the contribution of educational technology from the media point of view, not of educational technology in its widest sense because this Centre ever since it started has used a systems approach to curriculum development."

The Dundee Centre obviously envisages a growing influence of SCET in a supportive and advisory role for working parties at an earlier stage in their deliberations. This may point to the presence of a member of SCET's staff available at least as a consultant for a particular working party. It is thought that such a qualified presence need not be at every working party meeting but be available at suggested meetings, to give specialist information and advice. A move towards greater liaison is an attempt at the moment to have a film produced in connection with a technical education project. It has been suggested that SCET can contribute to this and sub-contracting facilities have been undertaken by Jordanhill College of Education.

The Dundee Centre's attitude to media resources in projects is a realistic one. As money is a major problem here as in every section of education, the Centre feels that SCET ought to be the obvious source of information and advice about cost-effectiveness of media-based resources.

Recently received detailed advice about tape-recorders was welcomed because the information was selective rather than in the form of a published catalogue. The Centre subjects the choice of media resources for particular projects to close scrutiny. The Director says "I've always been wary of including expensive media materials as ESSENTIAL materials for projects. But we must keep an open mind on what is likely to produce the best educational results. For example, if you look at the Project Science S1/S2 published by Heinemann, nowhere have we said, you've got to use particular sets of slides or films, although in the print material we have made suggestions about the use of such media resources. In that case it was a matter of cost. Now I've been persuaded recently that the cost of some photographic material and illustrative material on filmstrip is just marginally more than the same material on paper. If this is so, then I will certainly think about incorporating these materials."

National Centre and College of Education

An area which exemplifies differences in the national centres is that of the working relationship with their colleges of education. But a common factor that emerges is the inability of appropriate college departments to provide adequate support for the total resource needs of the Centres. In Dundee there are two graphics members in the Learning Resources Department of the College but they cannot cope with the kind of work required by Dundee Centre. Thus the Centre has had to rely on farming out work to people who are not essentially graphics specialists.

They are teachers of Technical Education whom the Centre has used locally on a part-time basis, and paid so much per hour. They mainly produce drawings, technical illustrations of various kinds. The college graphics artists cannot even cope with what they have to do for the college itself. Evidence points to the fact that a national service cannot look to college departments which have their own demanding priorities for permanent solutions to media problems.

Certainly the Dundee Centre needs a graphics specialist for full professional implementation of tasks in this area. The Centre regards the college Resources for Learning Department very largely as a commercial printer. It has used some of their photographic skills. Practical resource

support exists chiefly in print material, also in the production of overhead transparencies in numbers for pilot schools, units of 20 to 30. The Centre has used outside commercial companies only for print material and it has not used regional Teachers Centres for resource support.

Under-utilisation of Media

The Centre's assessment of the under-utilisation of media resources in general is based on experiences of teachers in the appropriate subject areas. Primarily, there is the fact that equipment may not be there and it costs money to put it there. Secondly, teachers as a whole are not familiar enough with the equipment to plan its use and to investigate it easily with classroom teaching situations. Although they may have been told about equipment in pre-service courses and even handled it intermittently in in-service courses, it is the day-to-day familiarity with use that is the essential factor.

Regarding the utilisation of BBC and IBA national broadcasts there is optimism that the meetings with the broadcasting staff sponsored by SCET will in the long term make for better understanding and much greater and more effective use of the media.

The Director states "We are talking to the broadcasters more than we did before. There is a hope now that there will be a closer tie between what they put out and the various developments in various subjects in the schools."

Scottish Council for Educational Technology

There is little doubt from available evidence that one of the most formative influence upon the Dundee Centre's approach to media resources has been the recent developing liaison with the Scottish Council for Educational Technology. This has affected thinking about the production of media for curriculum development. In the last 2–3 years among other things there have been produced for the Dundee Centre a slide–tape programme for in-service "Are These Our Children?": duplication of ten sets of slides on electrical safety for the related working party; currently in preparation a slide–tape revision unit for the Energy module in S3/S4 Science; a technical education film where tenders are being received and SCET is acting as producer; and the media production work for Integrated Craftwork S3/S5 Project now in progress—slides, tapes, process sheets, work cards for the course on Plastics, all materials taken to pilot stage ready for multiple copying.

Integrated Craftwork S3–S5

Integrated Craftwork S3–S5 Project is of such national significance and potential that is worth studying in some detail. The project illustrates the importance of leadership, in the person of the Assistant Director at the Centre responsible for the implementation of the task and of the will of the joint working party to effect what is an attempt to change quite radically the whole concept of technical education.

Inevitably in such a situation there is a suspicion of anything new and it was to the credit of the joint working party that those with reservations were persuaded that what was proposed was an essential step forward.

Resistance was overcome sufficiently to get the pilot scheme operating and there is now greater approval of and support for the course than there was when it was initially proposed. The basic aim was to replace the set time single craft examination with a project involving the possible use of a variety of materials, wood, metal and plastics. The last topic is the area of least experience among teachers and where it was recognised different kinds of support were most needed.

Although there was always an awareness of the support media resources might provide, the fact remains that the working party was in session about four years before the first reference to integrated media was included in the official minutes. There had been references to media in working party discussion but these had not led to specific decisions. It was not till mid-1977 that the committee had its first really detailed look at the media situation and it was decided that information should be sought in the area of plastics. This poses a problem of the extent to which in general qualified media expertise within working parties from the beginning of their planning might or might not create a greater sense of urgency in integrating curriculum and media. In this case it is interesting to note that policy decisions including those on media as between one project and another, may have affected the situation. For example, the Assistant Director said there had been some criticism that the Modular Course S1/S2 Project had been too prescriptive, producing teachers guides and giving all the back-up resources felt necessary. It was claimed some teachers maintained they would do better if they were just given the course objectives and suggestions for implementation. So a decision was taken in the Integrated Craftwork S3–S5 Project to give the objectives and the minimum of resources and see what happens. The claimed justification for this approach is that teachers are now asking for different resources and the intention is to supply what the majority want.

A key question however is, in view of statements made by teachers to the investigator, whether they would not have benefited more if e.g. slides, had been available for the teaching of plastics in the first year of the course when new information was vital, and whether decisions about media production based on qualified professional media expertise within a working party should not have been looked at seriously at an earlier stage of working party deliberations. It also poses the need for some external viable production agency or agencies to give professional advice and prompt practical support to a working party and to a project as nationally significant as Integrated Craftwork S3–S5.

The support in this case is being given largely by the Scottish Council for Educational Technology. The initial creative work by Mr. Peter Barrett, Lecturer in Technical Education at Moray House College of Education must be acknowledged. Mr. Barrett had already prepared a comprehensive list of resource materials suitable for colleges of education and supplied an updated list to pilot schools. Under the guidance of Mr. Barrett who approached SCET, discussions were held about the possibility of producing 700 slides and some 500 black and white negatives relating to the appropriate processes in plastics. In addition SCET will prepare 22 copies, one for each trial school of material developed in five years. In all there will be five tape-slide programmes on plastics. Additionally, Moray House has gathered a collection of aids, charts and educational kits from which it is hoped a selection will be made for pilot schools in the future. Thus it is seen that the implementation of plans for media resource production is beginning to gather momentum. Mr. T. Guy, a research assistant from New Zealand at present working from the Centre will check during the coming year which are the most commonly used and effective resources to be used by the schools such as e.g. tape-slide, accompanying booklets, wall charts etc. The secretary of the working party felt that there was more of a future for slides than for film in integrated craftwork. A problem was getting film at the appropriate stage of the course; that when it did arrive it might be out of phase with the particular skill being currently studied. Another problem regarding film was the vulnerability of projectors. Thirdly, there was more flexibility for the teaching process with slides, which could be held during discussion.

Fourthly, the cost of film could cause problems. It was felt that use of the overhead projector is increasing in Technical Education, but it had to be realised that for effective use there had to be a lot of preparation with consequent demands upon the teacher, as is the case with all learning materials.

In a progress report on the project compiled by Geoffrey T. Nicholls, assessing the development from September 1977 to August 1978, the results of a questionnaire on resources to schools were listed. Thirty-nine teachers responded but no attempt was made to identify specific respondents on the questionnaire nor the pilot schools they represented. The report states "When asked to list the type of instructional materials most frequently used in their classes the respondents showed a marked preference for duplicated notes and job sheets. Both were included in nearly every response. The list of instructional materials (A) being used are noted below in decreasing order of frequency of use with the first five being used significantly more than the rest."

A.
1. Job or work sheets
2. Duplicated notes
3. Charts
4. Video tapes
5. Slides or slide/tapes
6. Overhead transparencies
7. Films
7. Text-books
9. Chalkboard notes
10. Pin-up materials
11. Photographs

B.
Job or worksheets (26)
Duplicated notes (24)
Charts (21)
Video tapes (20)
Slides or slide/tapes (15)
Overhead transparencies (14)
Films (5)
Text books (2)
Pin-up boards (1)
Filmstrips (1)

Given that all types of instructional material were readily available, respondents were asked to list the five in order of preference, which they considered to be most appropriate for a course of this type. (B) is a list of instructional materials nominated, together with the number of times they appeared on lists of preferences.

It is perhaps disappointing that more detailed and critical analysis of these lists was not possible. Most teachers, interviewed in the present investigation, said that they would use relevant slides or filmstrips if they had them and this was in line with the secretary of the working party who felt that slides and filmstrips because of their convenience and flexibility of educational application—they can be held as long as the teacher wishes—are perhaps the best at this stage of resource development in technical education, at least until the resource organisation within schools becomes more effective and capable of handling a wider range of media resources.

Teachers Reactions

There was evidence that the syllabus for Integrated Craftwork was generally welcomed, although there were reservations and problems in the

area of media resources. One of the extremely good points about this scheme is that pupils appear to be enjoying it. Typical remarks were "There's been real interest in the selected project suggested by one pupil, a fly-tying vice and a set of drawers for materials, hooks and coloured feathers," "The pupils are enjoying the course."

There was evidence of a need for support in the area of media resources both for information and for appropriate resources. The following extract is typical. "As far as filmstrips and media are concerned it would have been handy right at the very start of the course especially for plastics which we knew very little about—to have had somebody who could have given this kind of advice at an early stage, how these materials were worked upon, their properties and so on. We knew well enough what we could do with wood and metal. With plastic we were dropped in at the deep end. We saw a filmstrip at the conference we had in Dundee more than a year after the course had begun. Now if we'd had that at the beginning, it would have made the job a thousand times easier—even that one filmstrip. Now for present purposes it's too late. It would have been beneficial if we'd run the pilot course for 2 or 3 years without examinations. But of course this just wasn't on. To run the course you had to have an examination and really the first year was chaotic. The syllabus we got from the Board and from the Joint Committee was fine. It told you what you had to do but very few teachers ever had used this before in school conditions. We spent our first year with the boys as guinea-pigs; we were using them to find out what you could do with these materials. This particular year the pupils who had to sit the exam in May were at a draw-back. Now the boys who started this year were much better organised for we've ironed out a lot of the problems we found in the first year. When we get the filmstrip, and with the filmstrip which we can show right from the very start, next year will be even better."

"They are going to send out both the slides and a filmstrip, so that we can evaluate them. I think it would have been better to have had these things sooner." The observation about the slides is significant in that, irrespective of accuracy, it underlines the needs observed in other Centres and in other subjects for an audio-visual professional and a subject specialist to co-operate closely in producing media products for national projects.

The project highlighted common problems of using media resources in an integrated crafts situation, especially problems associated with physical space. In order schools there are few facilities for a darkened room or projection areas, and organisation of media resources is complicated by the lay-out of the technical education rooms, sometimes on different

floors, in huts in the playground or in scattered situations. A teacher stated "We had to put plasterboard partitions to separate the room which had been all one. The noise was terrific. You were trying to talk and teach, and there was another class of twenty boys hammering in copper or something else". In Technical Education the organisation of media resources in many teachers minds is related to architectural environment and this is a factor for careful consideration in future design and planning. Another teacher said "Even if media had been available for the course, the workshop here would have been totally unsuitable for the showing of these. In fact the classes would have to have been removed to a science area with proper facilities". In another school a teacher stated "We do not have a great deal of space here but I would most definitely like to see the use of slide-projector and videa tapes. We are running at the moment with two sections of eighteen, big chaps of 3rd and 4th year in this workshop and it leaves little room for anything else other than caraft materials".

Although there is no recognisable antipathy towards the use of media resources among technical teachers—the phrase "I would like to use them" kept recurring.

For example, one teacher stated "In Technical Drawing we use the overhead projector and we use a taped TV programme in Engineering Craftwork. There's scope for more use of these and I know there are suitable media available but with us, expense is the biggest drawback. I think there's scope for more media stuff in the next year or two. I also think we'd be able to cover the full range of technology. Previous to the Integrated Craft course beginning, a boy had to cover the technology in metalwork in two years, 3rd and 4th year; he had to cover the technology in wood in 3rd and 4th year. Now in Integrated Craft he's got to do almost as much in both wood and metal, plus plastics, in the same time. So in fact he's got to cover three subjects in the time he'd previously had covered one, and in slightly less time. So I think to help this situation you need visual aids as much as possible rather than just demonstrations and note-taking for the most part. I think they can take a thing in better if they see it on a screen. I've seen this when I've taken the Further Education series on metalwork on television. We get it recorded for us for 4th year". Another teacher said "I'm not a great user of media which I find caused considerable fuss and bother as it means moving to another room and pupils become unsettled".

A teacher in another school pointed out the advantage of using overhead transparencies "We have a technical education staff of six for five rooms, so we must have constant movement. This means a teacher turns up at

the same time as the pupils so there is not the chance to prepare the blackboard or set up any possible equipment beforehand. This is where the importance of transparencies and work prepared on acetate sheets comes in. It would be a great help if we had a section adjacent to the workshop with a slide projector at the ready, especially for this course where we have both craftwork and theory to be taught. We have got to deal with different materials and I feel here films, slide/tapes would serve an important part in this. For example, we could show pupils the usages of plastics in a garage forecourt. I don't feel there are enough resources in Technical Education to help a teacher. We are tackling so many new projects. He requires assistance from outside with the support media resources can give".

Such typical comments focus the need for a greater flow of information on the availability, function and use of media as an integral part of technical education. This naturally relates to the responsibility of national centres to look at their literature and ask to what extent media resources and their use are discussed and interpreted in their bulletins and newsletters.

During the investigation, contact with urban and country schools helped to focus issues of information flow and of personalisation. Needs were more acute in extensive rural areas without Advisers and where literature sent out by the Centre was a life-line. Individual teachers illustrated degrees of effort in trying to overcome the disadvantages of isolation. "I can pick up a phone and contact the Assistant Director in Dundee. But I know him personally. We've no Advisers here but again I know someone in a neighbouring region and I can phone him. What we have in our region is an association of technical teachers which meet about three times a year. What other technical teachers in our region would do if they had a problem would be to ask me rather than anybody outside the region. I can either give them the answer or I'll find out for them." A teacher in another predominantly rural region said "We have our problems of communication. I've got little direct contact with Dundee and not having an Adviser doesn't make it any easier. With three counties being amalgamated into one region we found things had been done in one county and not in another. So there's real need for common policy and co-ordination and an Adviser could help here. We've difficulty in contacting the other schools who are doing the 3rd year course. The nearest is Selkirk, and Kirkcudbright Academy is doing 1st and 2nd year. We've helped each other with materials but that's the only contacts we have". In the light of such statements the importance of the national centres dissemination and information policy is crucial, especially for areas where information and support services are minimal.

Conclusion

The investigation revealed several positive factors which bode well for future developmental project work involving media resources. During the last two years there has been an increased awareness in the work of the Dundee Centre of the function and use of media, and a growing liaison with external expertise, in particular, with the Scottish Council for Educational Technology. In one new project there is a growing awareness of the need to extend the use of media in the schools where media have a definite function as an integral part of the teaching and learning process. The area examined was that of plastics. Again in view of the welcome given by teachers to the literature distributed by the Dundee Centre, there is little doubt that a greater input into this of information on media resources would be an added aid for teachers, especially those in areas of minimum support.

When we consider possible applications of micro-electronic technology to subject areas of the Dundee Centre, the future is both challenging and promising. For example, there is pressure to include in new science courses a study of the effects on society and the environment of scientific and technological endeavour. One way of doing this is by the use of simulation exercises and "games" in which decisions have to be made, often as in real life, on insufficient evidence. Such exercises have been developed by Glasgow University Chemistry Department and Robert Gordon's Institute of Technology, Aberdeen. Many of these are most effective if presented in an interactive mode by a computer through a VDU. It is inevitable that Dundee Centre will be increasingly involved in a wider front in the development of media applications in classroom teaching and learning.

EDINBURGH CENTRE

The Centre for Information on the Teaching of English, housed in Moray House College of Education, was in existence before Scottish Curriculum Development Service was set up. It was the first of the four centres to undertake a national commitment to curriculum development. The Edinburgh Centre as it is now named has three clear educational priorities. First, to develop a strategy to encourage more and more teachers to participate in the development of their subject, English. Second, to provide a service and support for teachers through the library, through courses, through the wide dissemination of published material such as *Teaching English*, the journal of teachers of English in Scotland,

and specially written documents such as "English for Slower Learners in the Scottish Secondary School". Third, to liaise with other educational bodies or agencies contributing to curriculum development.

The Centre staff comprises a full-time Director, an Assistant Director, a professional Librarian, a secretary and two part-time secretaries (the equivalent of one full-time). The investigation indicates that for the quantity and quality of work involved in a commitment of national significance, the human resources are inadequate. The priority function of the Edinburgh Centre Library of about 10,000 items is an educational information service chiefly for teachers. The library has a non-book holding of cassette recordings, slides and filmstrips, the cassettes including copies from records held in the library. There are 900 items of these, 30 items on slides and 150 on filmstrips. Custom-built audio-visual cabinets are used for storage. The library is responsible for mounting book exhibitions such as one on the mass-media for use at conferences, in schools, or at advisory service bases. The main library users are teachers, Centre staff and to a lesser degree students from Moray House College of Education. The librarian records a growth of interest in and use of audio-visual materials. The library contains a Caramate audio-visual projector, a microfiche reader, and a cassette recorder.

There is an increase of emphasis on media resources in the Centre's publications. In *Teaching English* there have been articles specifically on the media in relation to film, school-broadcasting, creative writing, and also in relation to mixed-ability classes. In the documents "Scottish Literature in the Secondary School", "The English Department in the Secondary School", and "English for the Slower Learner" and in occasional papers such as "From Speech to Writing", there is an obvious awareness of the significance of media hardware and software for curriculum development. The Edinburgh Centre has no facilities for production of print and non-print materials. Moray House College of Education handles most of its printing needs, other than the regular journal which is printed commercially.

The Edinburgh Centre excellently exemplifies the advantage of different approaches to the problems of curriculum development at national level as it has a different emphasis in approach and in applied conviction. Certain basic tenets underlie the Centre's approach to its commitment. In English the main resource is books, particularly literature. In such cases the book and the pupils' response to it *is* the teaching programme and the heart of the learning situation, but the methods of handling it are many and varied. It is in this area of methodology that the main thrust of the

Centre's thinking about resources is taking place. The first aim is to use resources by "cueing the child into the text perhaps through watching a bit of film, examining pictures, and consequent discussion on the basis of these". Secondly, there is the objective of "language improvement which can be effected by involving children in communication problems, offering them a wide range of possible means of expression from various forms of print, to pictures, to audio-visual, to artefacts". It is believed that more use should be made by teachers of visual material related to speech activity.

From experience, the Centre has an acute realisation of the restraints on the use of resources in the classroom. Primarily, there are the extra demands made on the teacher in terms of greater foresight and planning and the consequent need for more planning time, including previewing. There is the problem of special organisational arrangements either in his or her own room or in using another room. There is also the inhibiting factor of a rigid timetable. Other restraints are the lack of confidence of the average teacher in handling machines, the lack of immediate support when the machine breaks down and the lack of a viable resource organisation within a school where professional help is inadequate. Such factors have a deterrent effect on teachers and the natural effect is seen in a scenario where there is not enough confident, widespread, daily experience of using audio-visual resource equipment and materials among teachers for any kind of informed thinking to have started throughout the profession as a whole. The consequence is the Centre's belief that in Scotland there is no deep widespread conviction about how useful media resources can be in curriculum development.

The experience of the Edinburgh Centre also points to what is perhaps an even more fundamental fact that in relation to all source materials, teachers are not sure that the philosophy of learning through discovery is comparable with the benefits of direct teaching or with the time restraints on their syllabus content. Furthermore, teachers do not yet feel confident about their ability to direct children to a proper use of source materials or to manage a whole class involved in such individual or group learning activity.

The assessment of the national situation relating to media resources is only one factor in the Centre's acute realisation of the need to disseminate progressive ideas, for a policy of personal contact with schools, and for the intermeshing of curriculum development and in-service training. Perhaps it is true to say that the nature of the genesis of the first of the four national centres created an approach to curriculum development

which, when examined closely, has offered an alternative—a sound alternative, philosophically and in practice—to accepted national methodology of course or syllabus or programme construction through a working party system that constructs resource-based packages. Behind the practice of the Edinburgh Centre is the deeply held belief that it is in the interaction between pupil and teacher that teaching and learning dynamism takes place and that the spark of curriculum development flares within the mind of the teacher when he is largely self-motivated. The Edinburgh Centre's concept of its commitment in relation to its subject, English, does not propel it to the kind of materials-based project that we find initiated by other Centres, because it believes so much of the learning relating to the subject must issue from human interaction and local or school-based initiative and inspiration. Again, this is not to say there are not many ways in which it is believed English teachers should and must be encouraged and supported by "resources"; but it is an acknowledgement of a view that the present investigation has encountered elsewhere, that differences in concepts, aims and objectives in curriculum development inevitably have different outcomes in attitudes to and in the use of resources. The investigation found that the convictions of the Edinburgh Centre partly stem from the way the Centre came into being. Historically, it was not an accident that it was called the "Centre for Information on the Teaching of English" rather than the Curriculum Development Centre for English. When the Scottish Central Committee on English was originally constructed it took soundings largely through the Inspectorate. What they found was that a majority of English teachers did not want packs or kits or messages about how to do their job. What they wanted was available information to meet their particular needs and where to get such information. It is essential that to understand the basis of the Edinburgh Centre's approach to curriculum development we should not have a narrow concept of information and think that because, historically, the Centre's activities were based upon a certain assessment of teachers' needs, its approach to curriculum development is that of an information centre. Nothing is further from the truth. The real strength of the Edinburgh Centre—as the current investigation reveals from available evidence—is its insistence that the curriculum development which matters most happens when a teacher reflects upon his own experience and takes account of the experience of others and modifies his practices in the light of that reflection. The leadership of the Edinburgh Centre is clear in its conviction. It sees the prepared resource-supported programmes as an appropriate approach in many of the national projects currently being undertaken elsewhere. But it stresses the fact that in dealing with the

teaching profession, one is dealing with professionals and not workers who operate a syllabus. It is the teachers who are the people who cause the learning to take place. It is the quality of what is inside their heads that matters. That is why the conviction is strong in the Centre that one must see how closely knit is curriculum development and in-service training. It is this conviction that underlies and makes sense of the activity of the Centre with its attempts to develop ideas through its literature and partly through it to encourage local initiatives in many scattered situations. The policy of the Centre is in line with one intention of the Scottish Central Committee on English to develop ideas by working in liaison with small groups within an area, even a small group within an individual school, giving them support in a project they wish to undertake and allowing them to feed back any conclusions to the Centre and to the Central Committee. The point is that any initiative could come from a group at school or regional level or from the Centre or Central Committee. The heart of the Edinburgh Centre's strategy is that you must keep pushing downwards all the time to the people with the real problems to get the most fruitful suggestions from them of what ought to be developed and what ought to be investigated in order to help themselves. It is significant that the Schools Council in England has tended to move in this direction. Instead of taking people out of classroom and bringing "high flyer" teachers to devise materials, they are hoping, among other objectives, to get teachers in service, in their local environment, to undertake a lot of development.

The Centre magazine "Teaching English" plays a key part in this. Through it, the Centre keeps in touch with all the local development groups, publishing news of the projects they are undertaking. This helps more local groups throughout the country who are covering the same kind of project area to get in touch with each other. "Teaching English" has a wide readership and certainly it would appear there are few principal teachers who are not regular readers of the magazine. Increasing orders are forcing the print to run beyond 3000. The magazine is printed commercially and education authorities buy in bulk.

It is difficult to assess the total educational impact of different methods of curriculum development and by some modes of assessment it may be difficult to identify more sharply the impact of the methodology of the Edinburgh Centre. The pointers of the current review are very favourable within the context of the Centre's attitude both to the use of resources and more widely of its impact on the thinking of English teachers nationally. An example of this is how the editor of the Centre magazine does not now

need to commission articles. The material comes in voluntarily from practising teachers and others. An example of the quality of co-operative climate generated by the Centre concerns a research project involving 44 schools. This involved giving a questionnaire to twenty each of their pupils, and visits from and interviews with a research officer.

The degree of co-operation was outstanding.

The Centre puts a lot of weight on a policy of personalisation which dovetails with its major aims on curriculum development. This involves visits to colleges and contact with students of English who are offered the Centre magazine at half-price. Because of insufficient staff, personal contact with teachers and with local development groups is made in that order of priority.

Evidence of progressive thinking among English teachers in touch with the Centre who were interviewed during the investigation merits a closer look at the convictions behind the Centre's methodology and activities. The main drive is to operate at as personal a level as possible. This was exemplified when the school leaving age was raised. The Centre constructed a workshop of materials and the staff went round every local authority in Scotland and did workshops with English teachers in the schools. A day was spent in introducing ideas to teachers and materials that other schools in other areas had produced. A second day was devoted to encouraging teachers to produce their own material. Each individual operated on his own but with the encouragement to use the rest of his or her department. After a period of about 6 weeks another day was given up to the study and editing of the materials produced which might be altered in the light of comments from other people. What was left over in the way of materials produced was brought back to the Edinburgh Centre, edited and sent out to local authorities who duplicated it and redistributed it. This drive towards personalisation and in-service training is characteristic of the Centre's approach—personal contact with a large number of people. This inevitably poses the question of the inadequacy of staffing and resources crucial to the Centre's conception of its national commitment. The present situation is that the Centre is responsible for a lot of modest but vital school-based projects conducted at a personal level and not through a system of working parties. For example, one such project is being conducted in four schools in Fife where the relationship in practice between English teachers and Remedial teachers is being studied. The Centre aims to encourage co-operative work in this area where English and Remedial teachers are planning and working together.

The development of school-based projects is a conscious policy, aiming to get the materials coming from the schools rather than giving them the materials. Clearly the Centre sees its role as one of guidance, consulting, provision and leadership. How do these concepts affect the Centre's attitudes to media resources? This is seen clearly in the approach and attitudes of the Assistant Director. He sees the aim as two-fold:

1. to make the fullest use of media to teach English skills;
2. to teach media and bring about a fuller understanding of them, so that pupils can use media yet critically protect themselves from their powers of persuasion.

Widespread use is made by him of tape–slide programmes and of still and 8-mm cameras and the overhead projector. Examples of the use of the overhead was setting a class a problem with a Shakespeare play which needed some deduction on the part of the class; using it with slow learners and for creative writing, by allowing the pupils to make their own pictures and then get them to produce a piece of writing based on these. The Centre believes that, at present, the use of media resources is too haphazard, that it does not come from any kind of philosophical base as to why they should be used, that there is little consideration throughout the profession about the role of media. Consequently, they see their role as a disseminator of progressive ideas on the how and why of resources.

The Centre notes that the use of the videa-cassette recorder is on the increase in English departments as banks of cassettes are being slowly built up and through experience the VCR is becoming more familiar. The feeling is that the national broadcasting authorities are becoming more practically minded about what they want to do for English teachers, and off-air recordings are increasingly acceptable.

The Assistant Director states "There is a factor in the English classroom that will encourage greater use of small media-like tape-recorders and audio viewers that can be easily carried and handled. In the next few years there will be an increase in flexibility of organisation of a classroom—more groups situations and tables rather than desks. This will facilitate the use of media. We are trying to encourage the use of the overhead projector which we feel is much under-estimated. Its development might be helped by the use of a rolling board with a white surface which many schools do not have.

The overhead can contribute much to reading procedures and prediction exercises. There are three areas in English where the use of machines will

increase—those appropriate to the use of the video-cassette recorder, the overhead projector, and the small viewer for class, group and individual teaching".

As the Centre sees the dissemination of progressive ideas on the use of media as an integral part of the overall commitment to curriculum development this ties in with the aim of constant liaison with local development groups and making known what they are doing to other groups. The practice is basic to the Centre's total concept of information on the teaching of English. Evidence shows there is an increase among English teachers in the realisation of the importance of media resources. This is connected with the notion of active learning on the part of pupils and seeing media as an important contributor to a new style of learning which seems to be the way forward for the less academic pupils of S3 and S4, an area which a sub-committee of the Central Committee is examining. The Centre advances two reasons for the steady growth in awareness of the potential of media resources.

1. the availability, largely at present from commercial sources, of relatively easily managed materials, plus the fact that readiness to use non-book materials is closely related to their availability;
2. a growing understanding of the psychology of the problems of reading.

This is as yet not a widespread understanding but its growth will have repercussions on the use of media. It concerns the need to alert pupils to the way into a book where they are sharing the starting point with the author and very often the best way to do that is through media that do not involve print at all; it may be still pictures or a film.

National Centre and College of Education

As is the case with other Centres, the help which the Edinburgh Centre has received from college departments has been valuable but limited in relation to its resource needs.

There is a good relationship between the Edinburgh Centre and the media departments of Moray House College of Education which, for example, does not have a specialist graphics artist. If Edinburgh Centre wants graphics done, it does it in three ways. Sometimes, but very rarely, it applies for help to one of the other Centres, chiefly Glasgow. Secondly, it may persuade somebody in the college Art department to do a bit extra on behalf of the Centre. Thirdly, it gets commercial help and that costs money. The college itself has to cope with its own graphics problem as

best it can. The college television unit regards the Centre as if it were another college department and fits any requests from the Centre into its own college programme.

Similarly, technical back-up and servicing by the audio–visual college staff are done when the college can fit in the work. The Director states "We get help with things like tape-recorders and projectors and the relationship with the college is by and large satisfactory and given the kinds of work we ask them to do, it is pretty adequate but not for all things".

The working relationships between national centres and colleges of education media departments throw light on the lack of professional resource production adequate for the needs of the national curriculum development centres. It poses the question that has kept cropping up during a review of all four centres. Does the answer to the adequate production of media resources for curriculum development at national level lie in a co-ordinated national curriculum development service, self-sufficient in the professional production of media resources or one adequately supported by a national agency or agencies outside the service itself?

Scottish Council for Educational Technology

The Edinburgh Centre has obtained support from the Scottish Council for Educational Technology. An example is the editing of six hours tape into two programmes and the production of copies—a package that will be of use to teachers and pupils, based on audio-tape interviews with a contemporary writer. Another example is the completion of a tape–slide programme on a Visual Workshop in English Teaching, including photographic and recording facilities, and the provision of copies for in-service use. Another facility is a list of non-book materials for a booklet on Scottish Literature. The Centre believes that specialised information possessed by an agency like SCET has considerable significance for curriculum development and that this could cover information about the provision of resources, as national centres with their limited resources can only supply resources to piloting schools at a very limited level of professional product and of cost. The Director states "Regarding specialist advice, I think the answer, at present, is to get it from all the sources we can draw on, for the simple reason that no matter how much we in the national curriculum development service use technological devices and media resources, we are not in the first instance expert in them. So it is very useful to have SCET for a very wide range of advice". What the

Edinburgh Centre would like from SCET is not so much, at the present stage, particular kinds of media resources, although as we have seen above, these have been obtained for particular projects when requested, as particular kinds of advice and information. It would also like, and it stresses the importance of this, a particular level of understanding of what it is aiming to do. For example, in some of its investigatory work, it may simply want something that is useful and unobtrusive and easily managed. It suggests that there is a danger of a specialist in this field demanding a degree of sophistication that may actually get in the way of spontaneous reaction to what it is trying to do. The Centre believes that a high quality of co-operation is required between itself and an agency such as SCET. In the case of the Edinburgh Centre evidence of their working relationship with one of SCET's staff shows this liaison is developing. The Director states "The kind of advice we need from SCET is in the main technical, but it has to be technical advice that is informed by an understanding of what we are trying to do. SCET's potential for the future is quite considerable".

National Broadcasting Authorities

The Edinburgh Centre rates the contribution of BBC and IBA as "enormously useful". Yet evidence points to the need for a developing and more meaningful liaison between the broadcasting authorities and the national centres. This is beginning to happen with the establishment of a broadcasting liaison group where discussions can take place between the Directors of the centres and the broadcasters. Both elements are becoming more aware of the need to integrate their programmes. The Director and Assistant Director of the Edinburgh Centre have been actively involved with broadcasting programming and although there has not been a great deal of phased planning, there has been influence in both directions. The Director states "It is perhaps getting closer to the situation where a producer planning broadcast programmes for the future and we thinking in terms of future projects talk about it. It is the hope of the broadcasting liaison group that this will emerge".

National Centre and the Schools

A significant factor during the investigation was the personal appreciation of teachers of the support of the Edinburgh Centre For example, one stated, "The Edinburgh Centre has affected me a lot. In my experience it has been the main stimulus, the main source of encouragement for one to

develop one's subject, to promote ideas in circumstances where change and ideas need encouragement. As well as *Teaching English* being a great inspiration for the infusion of ideas, the Director and Assistant Director were personally very supportive. You wrote to them and they replied promptly and fully. They came to see us and what we were doing. I can't overpraise the support the Centre has given to English teaching away out in the backwoods where I was." It is significant that this kind of assessment concerns a Centre where there is an acute awareness of the importance of personalisation. It certainly underlines the need for more realistic staffing in the context of the Centre's aims and objectives.

A principal teacher stated, "Our main contact with the Centre was in terms of the Assistant Director coming here and I sent two members of staff to Edinburgh." Again, it is significant to see the quality of thinking about English teaching and the use of resources that has developed in this particular school. Intelligent use has been made of media in, for example, an interdepartmental study in S1, involving different departments and different kinds of skills. The project started with the film "Jason and the Argonauts", and with filmstrips on the Trojan War, one which presented the story of the war at the beginning of the project and one which summarised the more complex aspects of the war at the end. Throughout the project the pupils were asked in groups to work with tape-recorders and with tapes. Each group of children in mixed-ability first year classes had to produce some end product; in some cases, that was drama; in some cases a collage; in others, tape-recorded material, e.g. a taped commentary on a wrestling match at the games which were the forerunners of the Olympic Games. In the English Department teachers are increasingly handing out tape-recorders to pupils. Two years ago there was only one tape-recorder for the whole department. Now the department has four Tanberg audio-tutors and a National Panasonic VCR. It has also three small recorders which can be given to pupils.

The Art department co-operates with the English department and they also use film-strip material to present some of the artistic concepts in the project. Other departments which joined in were Speech and Drama, the Classics department, and to a more limited extent the Music and History departments. In S3 the English department plans to use film in future projects, e.g. *Watership Down* in a study of the animal kingdom. The investigator noted how the sophisticated thinking on positive criticism of film encountered in the Edinburgh Centre was reflected in this school. The principal teacher states, "We are keen to use film material on its own and not merely as a support for textual understanding. I would like in future

to use film as a curricular experience on its own. One of the things that impresses me about film material, moving images, and to a lesser extent, audio material, is how pupils are motivated to sit up and take notice. This is a kind of incentive. It is getting away from the interpretation papers and perhaps coping more with a disadvantage in education that there is so little connection between what goes on outside school in their lives and what goes on inside." The school states that it benefited greatly from the BBC's production of "The Plough and the Stars" with S5 and S6. It looking forward with anticipation to the BBC's plans for producing Shakespeare's plays. The English department is thinking in terms of further interdepartmental studies where media resources can be the central focus, e.g. film material on animals can provide biological concepts for the Biology department in an interdepartmental project, just as the English teachers and pupils can benefit from the creative aspects of the common topic.

The extent to which thinking by the Edinburgh Centre about the media has rubbed off in the school under review is significant. "Basically, what we are trying to do when we want children to be creative, to communicate, is to get them thinking in terms of a mental image and communicate that mental image through the medium of words to someone else. A basic problem is that many children do not have a clear picture to start with. If we can give them an image, a picture to talk about and show them by this means what it is we require them to do in words, to translate the mental image into words, it would make communication easier for many of them."

The strength of this English department's approach is that it thinks of media resources as an integrated part of curriculum development, not an extra. It applies media, for example, to effecting a more organised approach to the curriculum. One way this is done is by the different groups into which the department is divided, preparing and filing overhead transparencies of lesson plans or outlines or information about projects. It saves teacher's time and effort by going to the transparencies file and getting what they want for immediate use. It is using media to promote and improve departmental organisation.

The relationship between the Edinburgh Centre and the school under review illuminates important issues such as local motivation and self-initiative on the basis of the school's awareness of its own capabilities and needs. It throws light not only on the use of resources in a largely self-help situation but on the advantages for a department of hard thinking about media resources, their function, why they are used. The principal

teacher states, "Developing use of resources and changes of attitudes must come from within departments who are willing to get help from anywhere. A principal teacher's role is vital."

It would be inappropriate to omit a statement by the principal teacher of English on teacher motivation for two reasons. It is a significant reflection of the convictions of the Edinburgh Centre and it relates closely to the integration of resources in the English classroom. "Analysing his own needs is the beginning of an answer. Certainly we would examine any pack coming in from the outside to see what we could use in it. But basically what we are trying to do here is solve our own particular problems to meet which we have to design our own programmes of work. Now the important point is this. When any individual is involved in the construction and preparation of these programmes with every kind of content including media resources, that person has invested his own time and energy and motivation in this. He really wants to see it working and he will not take no for an answer. But if a package comes from the outside, he will try to implement it with different degrees of motivation, sometimes as we know even with negative attitudes. The tendency is he will distribute it to a class and start to work on it but when he meets any kind of problem, or worse, opposition or a suggestion of failure, he is more likely to pack it in, simply because he has not a strong enough personal desire to make it work. Now, if he is involved in its preparation, there is something of himself in it. The point I'm trying to make may be illustrated by a story of the young chap with a trolley he had made himself. A friend came along with one which had been made in a factory. The young chap's objection to his friend's beautiful trolley was there was nothing of him in it. This is a danger with packs of materials that are handed down. There is nothing of the staff in it to begin with. If they are willingly involved in the preparation of anything, they are more likely to have the will to make it work and accept any modifications that are necessary. We've got to look at the fundamental question of motivating teachers in curriculum development."

Evidence suggests there will need to be a re-appraisal of the limited staff structure of the national curriculum development service. In the case of the Edinburgh Centre, the assessment will need to consider the Centre's objectives in terms of (a) a heightened policy of personalisation; (b) a more intensive dissemination of the philosophical and educational ideas for the integration of media resources; (c) the aim to effect a more widespread understanding of motivational concepts behind school-based initiatives.

The investigator noted a lack of professional support in three key areas which basically are interdependent: (i) personalisation and information flow; (ii) specialism in learning difficulties; (iii) resource support.

Despite restrictions in these areas, the impact of the Edinburgh Centre has been significant.

GLASGOW CENTRE

The review shows that of all the national centres the Glasgow Centre has been most committed to the production and use of media materials in curricular projects and, significantly, to developed thinking on the function of resources, or the *why* of their integration. For the first five or six years of its existence the main work of the Centre may be put under two headings:

1. the general provision of information relating to curriculum development in the social subjects, chiefly by an annual bulletin and a newsletter or information booklet issued twice a year;
2. the provision and production of kits and resource packages of materials to support specific projects and initiatives. At that time the work of the Centre was chiefly concerned with non-certificate social subjects programmes for S3/S4, prior to and immediately following the raising of the school leaving age. It was also concerned with the existing curriculum in social subjects, particularly history and geography. The construction of kits, including non-print, audio-visual materials, was aimed at these two major areas.

The emphasis, by and large, was on the production of kits; in the case of non-certificate material, this was heavily orientated towards pupil material but in the case of the Geography materials for S1/S2 which have gone to over 400 schools in Scotland they were in the form of teacher guides. This aspect is probably in line with a shift in the balance of work, time and thinking to the different priorities of the centre's work. Regarding media resources, for example, the focus of emphasis is changing in that rather less of the kit type material is being constructed and a good deal more of the teacher guidance type is produced. Additionally, curriculum development is being carefully studied by the Centre in the context of the kind of school-based initiative that the project Integration in the Social Subjects in S2 is encouraging. The aim here is to try to get schools themselves to implement a particular project of their choice with the Centre acting chiefly but not wholly in an advisory role. This is an

important development which will, in the long term, help the centre to evaluate the results of different approaches to curriculum development at national level.

The staff of the Centre comprises the Director; an Educational Psychologist for the evaluation of projects; a Producer of audio-visual aids; two subject staff members, one for History and one for Geography; a Qualified Librarian; an Administrative Assistant; a Production Supervisor; two graphics artists; a print operator; and nine (mainly part-time) assistants, involved in clerical and packaging duties. This is the best staffed centre in the service, yet it is significant that for a national commitment of the extent which the centre is asked to implement, the human and technical resources are, by national professional norms, inadequate. This fact puts into perspective the obvious needs of the other centres which are more deficient in human and technical resources.

At an early stage in its development the centre appointed to its staff both an educational psychologist and an educational technologist although the latter is known as a lecturer-producer of audio-visual aids. Possibly more thought was given at the time to the role and potential educational contribution of the psychologist than to that of the technologist, but the contribution of the latter has developed both in theory and in practice over the years. Glasgow is the only centre in Scotland with a full-time member with professional audio-visual expertise on its staff. This fact naturally focusses attention on the issue which kept cropping up during the present investigation of the significance and value of professional audio-visual staff support within a national curriculum development service. It is certainly significant that throughout its history the Glasgow Centre has stressed not only the need for expert production and the availability of media resources but also consideration of the *function* of such in curriculum projects. It is to the credit both of the Centre and its producer of audio-visual materials that this advantage over the other centres has been fully used with, significantly, a certain spin-off advantage for some other centres.

Although the library, in a traditional sense, has not played a major role in the activities of the centre, set against the commitment to the production of materials, there is evidence that the role of the librarian has perhaps been a more active one than that in the other centres with a greater involvement in working parties as a supporting member with, for example, copyright information, and advice about research and accessibility to visual material. The librarian's involvements with the audio-visual materials is mainly one of provision for their display. The Centre has a

mobile resource unit, a travelling exhibition which takes resource materials to many schools in rural areas normally lacking support. Recently the A-V Producer visited secondary schools in the Highland area and in the Borders, taking with him materials from the other national Centres as well as from Glasgow. This is an excellent example of how co-operation among Centres can develop a policy of personalisation though contact by a staff member of the service. The A-V Producer says "I hope this exercise will say to teachers in these remoter areas—this Scottish Curriculum Development Service is not a faceless body of people that exist somewhere and telling you what you should be doing. It's people who care about the children in your schools. The response I've had was great... 'thanks for coming to us'. I feel the mobile resource unit has got a part to play in concentrating on these more unpopulated areas".

The facilities for production work are inadequate when judged by fully professional standards and this is even more apparent in the other national centres. Production-wise none of them are professionally self-sufficient. The Glasgow Centre has photographic facilities somewhat similar to those at Aberdeen. The recording unit is in the office of the A-V Producer and is used mainly for electronic editing and dubbing. Jordanhill College of Education A-V media departmental staff, as staff in the other colleges of education in Scotland, do their best, despite their own priority production commitments, to help their national centre with live recordings, either in the college studios or on location. Photography at the Centre aims to produce 35-mm formats mainly for filmstrip use in schools. Slide copying and photocopying equipment is available for this. Art work is prepared within the centre but made in quantity by commercial agency for filmstrip production. Welcome additions to equipment are cassette recorders and slide viewers available for the support of specific projects in schools. The quantity of excellent materials produced by the Glasgow Centre involves extensive work in printing and packaging.

Evidence shows sophisticated thinking about the role of media. They perform a variety of functions. They illustrate; they stimulate; they provide an element which, because it has been carefully considered by working parties and the Centre staff, is indeed essential to the full learning process. Nevertheless, a fact that should be noted is the preponderance of materials that are teacher-orientated and teacher-controlled. It is mostly teachers who manipulate media learning situations. In practice, there are few schools where pupils directly handle media equipment. The Centre hopes that this might be encouraged by the issuing within kits of cheap commercially produced hand viewers.

Evidence of the use of materials in projects was impressive, of audio-tapes, filmstrips, overhead transparencies, radio broadcasts. These are used in, for example, S3/S4 non-certificate programmes, in such projects as Major Power Rivalry; Conflict in the Middle East; World Energy Resources; E.E.C.; The Car; Scope of Leisure; Our Town; Police and Community Project; "Living with Others—Rules and Responsibilities"; also in History S1/S2; Economics S1/S2.

The question of cost is under constant consideration. An example of this is the deliberate use of plain cardboard for packaging and of a simple labelling system. Another is the bulk production of filmstrip material—usually of 250 copies—with the Centre doing the cutting and packaging. Economic stringency increasingly imposes strains on the human and technical resources of every national centre. Evidence shows that more realistic assessment of their significance for Scottish Education is a necessity if centres are expected to implement a key role.

The Director of Glasgow Centre states "One of the problems I found when I first came into this work was to get people to see audio-visual resources as anything other than useful additions. Over time, I think we have got most though not all our working parties, to accept that they do need to look at the whole range of resources and their function when they are planning a particular project. If they decide that they want to use a particular audio or visual resource, then that becomes just as central to the project as if it is a book or another kind of more standard or "orthodox" resource. I have tried very hard to get our educational technologist much more involved with working parties and he is probably now more involved than any other member of Centre staff looking at the relationship between educational technology and curriculum development and the implications for producing material". It is in the national interest that this staff-college quality of thinking should be transmitted at all levels to working parties, to all curriculum development agencies and to those in schools who are responsible for resource organisation.

It would be naive to believe that school-based curriculum development will flourish without intensive study of the resource problems attendant on local initiatives. It is this realisation that has been turning the thoughts of the Glasgow Centre staff to the problem. There is a growing belief throughout the whole of the UK that schools should be encouraged to implement their own ideas and initiatives in the integration of curriculum and resources based on a self-analysis of their own local needs. This is emerging from diverse reaction to the preparations of highly-structured curriculum packages and projects devised outwith the schools.

It was in this latter area that the Glasgow Centre was heavily involved in the early 'seventies. The feeling now is that while there may be a place for the highly-structured, resource supported package such as that devised for the project "Living with Others–Rules and Responsibilities", this approach needs to be looked at more critically than in the past. The aim is to try to encourage curriculum innovation and development within the individual schools and in so-doing to study the how and why of resource-based education. This underlines the project Integration in Social Subjects in S2, which will be discussed more fully later in this section of the report.

It will be seen that the multi-form approach of the Glasgow Centre in seeking a balance between resource-based packages devised outside the schools and the encouragement of school-based projects to explore and devise their own programme—is a valuable one as it has implications for teacher motivation and for in-service training in curriculum and resources.

A final summary of the work of the Glasgow Centre cannot omit mention of the resource materials for non-certificate social subjects in S3/S4; the preparation of materials for History S1/S2; a feasibility study in Economics S1/S2 sponsored by the Central Committee; all the teaching units for the new syllabus in Geography S1/S2. The investigation shows that the extent and variety of the Glasgow Centre's work make it an essential test-bed for problems posed by the use of media resources in curriculum development.

Later in the report there will be a more detailed study of two projects sponsored by the Glasgow Centre.

1. "Living with Others—Rules and Responsibilities", illustrative of the structured, resource supported package prepared for schools.
2. Integration Social Subjects S2 illustrative of school-based initiative and development.

It is hoped a closer look at these two projects may produce some useful pointers for the future.

Educational Authority Advisers and National Centres

The Director of the Glasgow Centre says "I think it would be fair to say that as far as links with social subject advisers and regional resource centres are concerned, we have established a reasonable working relationship which depends upon personal contact and goodwill. To the extent to which curriculum development becomes more school-focussed we

will have to use advisers still more". For example, in the Centre's work in Geography S1/S2 for mixed-ability teaching, the working party convener, the Centre Geographer, used a number of advisers on his team. He co-operated closely with them in committee and in visits to schools. In looking at the relationship of education authority advisers and the Glasgow Centre, one must recognise the solid base of co-operation that has potential for widespread dissemination of the Centre's thinking on curriculum and resources.

National Centre and Audio-Visual Media Department of the College of Education

The original intention regarding audio-visual support was for the Glasgow Centre to get adequate help from the excellent audio-visual media department of Jordanhill College of Education. But at an early stage, as has been indicated, the Centre Steering Committee made a wise decision in appointing a qualified full-time producer of audio-visual materials to the staff of the Centre. The producer during the last few years has personally built up an independent production unit within the Centre, but despite this, values his close contact with the college unit.

The relationship between the Centre and the college is an excellent one and in hindsight the decision has proved correct because the reality of the present situation is that the Centre producer gets job satisfaction from his continuing commitment and the college department is in fact too busy pursuing its priority commitments to teacher training to do as much work for the Centre as it might otherwise wish to do. By and large the Centre is independent of the college for both print and non-print resources. The college department takes no part in the planning of the Centre's resources packages. If it is involved at all, it is on an *ad-hoc* basis perhaps to help meet an emergency deadline. The investigation leaves no doubt that as far as audio-visual resource provision for national centres is concerned, reliance upon audio-visual or resources-for-learning departments of colleges of education is unrealistic and in large measure tends to obscure problems. There appears to be no evidence in favour of tying the resource production element to college units with the expectation of adequate support. These have a full-time job catering for the many needs of their own institutions. It is within this context that one must look at the obvious advantage of having full-time professional media expertise within a national centre itself or adequate support from another external agency or agencies.

The Scottish Council for Educational Technology

Evidence shows that the relationship between the Scottish Council for Educational Technology and the Glasgow Centre is a progressively developing one. SCET has accepted a role supportive of curriculum development. It is open to the four Centres to ask SCET if it is prepared to undertake a particular task relating to their projects and involving applicants of educational technology. The Centres are currently endeavouring to meet such requests. In the past the Glasgow Centre has perhaps used SCET less than other centres. This may partly reflect the advantage enjoyed by the Glasgow Centre in having the full-time service of a qualified producer (audio-visual resources) on its staff. Also one cannot ignore the fact that although the Glasgow Centre has worked with success independently of the audio-visual media department of the college, nevertheless the potentially supportive presence of one of the best A-V units in British colleges of education was advantageous especially in the early development of the Centre. Both at Director level and at A-V producer level the Glasgow Centre has had continuous liaison with SCET. An example is the Archive Project of the Scottish Council for Educational Technology, which catalogues archives and considers their use in projects such as, for example, the unit "Twentieth Century Family". The Centre's A-V producer is very interested in exploring all internal and external possibilities of sources of materials applicable to curriculum development. The staff of Glasgow Centre believes that as there may be a progressive move towards the encouragement of school-focussed and school-based development, the links with SCET will be strengthened.

The Director acknowledges the general advice that comes from the Council for the Educational Technology (U.K.) based in London. This is mainly in the form of booklets and reports available in the Centre library. The research and enquiries conducted by CET have had some positive influence on the thinking of Centre staff. SCET is normally called upon for direct information and material help in regard to Scottish projects.

Centre Projects

There are two projects developed by the Glasgow Centre worth closer analysis as they illustrate different approaches to the problems of curriculum and resources. The first is a Police and Community project produced by the Joint Working Party on Police and Community Courses for S1 and S2 and it has resulted in a structured pack of materials designated "Living with Others—Rules and Responsibilities". The title

describes accurately the content of the material and as such it is one "under whose umbrella BBC Radio in Scotland could produce a series of closely related radio programmes".

The working party produced a course which provides opportunities for the participation and involvement of local police forces and which should encourage closer links between police and school. A major aim was to help pupils towards a greater understanding of concepts implicit in areas such as rules, laws, participation, responsibility, enforcement, justice. The issues linked to organised teaching and learning units were dealt with in modules on bullying, truancy, theft, vandalism, football vandalism, disorder on public transport and under-age drinking. The means by which concepts are developed and related to the issues indicated is a Youth Club simulation.

The teaching package is made up of eight modules, relating to the above seven issues and an eighth concluding programme. It contains as great a variety of pupil activity and teaching aids as was possible for a course for the whole ability range in S1 and S2. Although the feasibility report envisaged a pilot of twenty teaching periods, the structure of the project is sufficiently flexible to allow teachers to plan courses which are longer or shorter than twenty periods.

The package provides teachers' notes, pupils' reference materials, pupils' work books, audio-visual aids—slides and overhead transparencies. Although media include a BBC radio series, this is optional.

The project is useful in that, too, it gives an opportunity to look at the relationship of national centre and national broadcasting authority. There are two aspects of contribution of national educational broadcasting to curriculum development. Firstly, the rich and varied programme content in many subjects transmitted as a general supportive and enriching element for teaching and learning. Secondly, the specific, if rarer case where a national working party has actively co-operated with the broadcasting authority and the broadcast programmes have been planned and written as part of a national project.

"Living with Others—Rules and Responsibilities" illustrates the latter situation and the lessons learned are worthy of mention because they provide useful pointers in the developing liaison between the national curriculum development service and the broadcasting authorities. For example, the producer of the BBC radio programmes which were part of the structure package for "Rules and Responsibilities", analysing his relationship with the national working party which had been one of

fruitful co-operation said in retrospect he would have preferred to be in at a much earlier stage in the deliberations of the working party.

"It was an exercise made more complicated by the fact that I came into it later than I would like to have done." He maintained there was scope for the broadcasters to be more involved, circumstances permitting, than in the past. The convener of the joint national working party said "The BBC did not come in until after the pilot and by that time the working party's views were very clear. The working party's material had been formed, and therefore there was much less freedom of manoeuvre, or ways in which the BBC could be used. I think if they could have been brought in earlier more account would have been taken of the relationship between the BBC and the material, and vice-versa. The links could have been pointed out naturally within the pupils' work programme as opposed to having to be made in the teachers' notes which unfortunately are not always read". This lesson learned by both BBC and national working party kept recurring in other areas during the present investigation. Throughout the national field of curriculum development the general application of this lesson is the need for an early phasing in of professional expertise in media resources to the working party programme of planning and preparation.

The Police and Communnity Working Party first met in February 1975 and by its second meeting at Easter 1975 it was already thinking in terms of the structure it was going to use and of the dependence of that structure on media in order to make the structure more realistic and relevant to classroom needs. Here was an example of an awareness not only of the technical problems posed by media but of a need for a working party to explore the educational function of media in relation to a particular teaching and learning situation. It is at this point that the presence of someone qualified in media has meaning. The convener said "We were able to book in advance the services of the Centre's full-time A-V producer. It wasn't a case of our suddenly thinking of something and the producer having to be dragged from doing something else. It was on the agenda for our meeting just when the audio-visual producer, or the artist or graphics people should be brought in because they had their visions concerning whether or not they could live up to the expectation we had and whether what we were planning was feasible in terms of cost". In the light of those statements it is obvious that national working parties without the support of such available expertise are at a disadvantage.

The working party decided that at the pilot stage of the project and with the expert help of the Centre it would produce its own tapes. But the

decision not to have a tape input in the final material was made for two reasons. By that time it had decided to seek BBC co-operation and the BBC had convinced the working party that they had an expertise which was as an audio output, that they could produce seven twenty-minute programmes which teachers could use at their discretion and would cost nothing. On the other hand if the working party was to build-in tape in the final package, it would add to the final cost and the number of schools interested might be fewer. So before the pilot stage the decision was taken to have the tape input only for the pilot.

Again the decision was taken not to provide specialist media information in the package, such as costs of related films and of other media elements. This was based on two views. Firstly, that it takes a lot of time which was not available to the working party, and, secondly, that busy classroom teachers did not have the time to do the amount of preparatory study that involved the logistics of collecting material and previewing it. So what was ultimately provided was an organisational structure which was straightforward and lucid in a series of modules simply and realistically resourced so that the teacher could keep ahead of his class without stress because the material could stand on its own but obviously would benefit from teachers using it and developing it in the light of their experience.

This important project produced in conjunction with the Crime Prevention Committee of the Chief Constables of Scotland has had a very wide take-up from the Centre and a monitoring exercise shortly to be undertaken should reveal how effective it is.

Another project sponsored by the Glasgow Centre and significant because of a different approach from that of the highly-structured, Centre-prepared package is Integration in Social Subjects in S2 project. This arose out of Curriculum Paper 15 which recommends that although the basic approach to the teaching of social subjects in S1/S2 should be discipline-based, there is a case that needs to be examined for the development of integrated modules involving the social subjects. Instead of offering themes and resources in the customary way, the committee decided to ask a number of schools to devise their own programmes of integration and plan resources to meet their individual needs.

In this case the strategy was to set up a steering group to exercise an overview of the nature of the programmes, to help the schools only if and when it seemed necessary or appropriate with any intractable resource problem but otherwise to leave them with a very high degree of responsibility for their programmes for which they were expected to

generate if not all, then a very large proportion of resource. This appears to be in line with research carried out elsewhere in the UK into the movement towards encouraging schools to develop resource-based education on the basis of self-analysis of their own local needs. The fact that it would be naive to believe this is going to be other than a task demanding experiment and commitment points to the significance of the project being developed in Glasgow. The actual experiment has been conducted in the summer term of 1979 and the involved schools have given all their time in geography and history in that term to their particular integrated theme or themes. It is hoped, among other things, that the exercise will help focus the need for an effective resource organisation within schools as well as spotlight problems involved in integration of the social subjects.

The main idea was that the integration in term three of the second year would build on the ideas and skills in history and geography and any other social subject that may have been studied in the previous five terms.

Regarding resources support, the steering group did allow a little flexibility with the idea that it would be willing to help if a school got completely stuck and was unable to obtain education authority help. Under normal circumstances if a school starts a new piece of significant work, it would have some per capita allocation to implement it and the steering group did not expect the schools to give that. The basic aim was to build on resources that were in the school. Secondly, each school was asked to make their choice of topic, decide on classes and consequent elements or organisation. Evidence shows that resources were not a point of focal interest at the beginning of the experiment. What was more important to the schools was to produce a topic which they thought would be a useful vehicle for integration. It was later when members of the steering group acting as tutors and liaison persons for particular schools visited the school for which each was responsible that the question of what the schools were going to do became keyed much more closely to what resources would be required and what problems in the field of media resources were being encountered by the participating schools.

It appears that this approach to curriculum development might encourage schools to strengthen liaison with the Education Authority Advisory Service or teachers' resource centres. The convener of the steering group states "If there's an adviser or a teachers' resources centre which is a normal part of that set-up, schools could draw on resources, for example, in areas where they did not have an adviser in social subjects. In the Central Region an adviser in Local Studies in co-operation with a

resources centre to which Stirling University has been giving some help, was looked upon as a possible support for a local school undertaking the project. But if a school got absolutely stuck, for say, something like paper, for which they normally get money in the course of a year for an experiment, then the steering group would help". The convener also stated that an advantage has been the availability of the A-V producer on the Glasgow Centre staff who can sit-in on steering group meetings on request. The schools involved in the project are expected to go to their own local resource agencies. This in practice may mean contacting an adviser if there is one. In some cases it might be up to them to produce their own slides. In general terms, there is little doubt from the available evidence that this approach to curriculum development should in time lead to a strengthened relationship between national centres and the Education Authority Advisory Service on the one hand and on the other between schools and advisers. The compulsion of resources needs may prove to be a key factor in developing more significant co-operation in school-based projects encouraged by the Centres.

National Centre and Schools

Schools visited by the investigator which were either undertaking or thinking about undertaking "Living with Others—Rules and Responsibilities" were largely regarding it as a project on social education. This confirms the statement of the convener of the working party who said "Many modern studies teachers—and I have feed-back from teachers and advisers on this—who intended to slot it into Modern Studies S1/S2 have had it taken away from them and have been told they can't see it or have been told they can't use it because Guidance staff intend to use it. The working party's view was quite clear. We couldn't dictate how and where it should be slotted into the curriculum but our view was it would be much better as a subject contribution, preferably but not necessarily a contribution on the Social Subjects".

The doubt on the area of objectives at least gave schools the flexibility of choice of approach and use. Discussions in different schools showed how highly eclectic teachers are and how materials centrally produced will never entirely suit a particular teacher in a particular class. Evidence shows that from a highly structured package teachers will extract what suits them and adapt to suit their own needs. The Glasgow Centre is fully aware of this and the fact that individual teachers, despite some reservations, praised the "Rules and Responsibilities" pack proves that the work expended on the project was worthwhile. But reservations and

criticisms are noted. The Director states "I would say what the most capable teachers are looking for from a model like this are some guidelines, some overarching principles under which they might operate. They don't really want very detailed resources. The teachers who probably use our materials the most are the less experienced ones because if there is a fairly highly structured package like "Rules and Responsibilities", it helps the inexperienced teacher and does make a contribution to the children's education as some inexperienced teachers are faced with difficult problems especially when they are teaching across the ability range in S1/S2 or if they are teaching the less academic in S3/S4". A member of the working party said "I don't think this is the way curriculum development should go, but it has a definite place".

The investigator found that in schools where there had been a resolute attempt made to establish a viable resource organisation, whether inspired by an assistant head-teacher (curriculum/resources) or by a principal teacher who, in one school, because of his commitment to resources, had become a sort of unofficial focus of general resource organisation, there was a more conscious effort to integrate the resource element to the curricular programme in national projects. The use made of media in a structured project like "Rules and Responsibilities" bears out the significant fact that we can only understand the problems of media resources in curriculum development at national level by looking at them within a wider context which includes an examination of the resource organisation of every secondary school. A good example of this is one school where the project has been undertaken and developed by an assistant head-teacher responsible for curriculum and resources. As the authoritative point of reference for all matters relating to media resources he has created the kind of resource organisation which guarantees a national project a reasonable chance of successful implementation. This is the second year of the school using "Rules and Responsibilities" for Social Education. There are three classes taking it. The pupils say they like the presentation when the tape is played first and then have a discussion on the slides and transparencies. Worksheets are taken out and discussed before working on them. The assistant head-teacher says "This kind of movement and change throughout the project—they like that, particularly the kids who are not the most academic". A principal teacher in the school says "Our assistant head-teacher gives the opportunity for discussion about resources and for members of staff to come along anytime they wish to use the audio-visual material in the school. We have a study group that meets once a month and they look at the A-V resources". The assistant head-teacher says "We want materials that are

designed almost on industrial lines so that staff and pupils can muck about with them. With the VCR we use you can hardly do anything wrong to it. It's got the toughness of industrial design and it's a natural follow-up for a project".

This school which has given "Living with Others—Rules and Responsibilities" a good chance of success was not afraid to voice reservations and positive criticisms. One such was the inability of pupils of less than average ability to hold concentration and be interested for any length of time. It was felt national centre packs tend to be designed perhaps for too long a period. The problem posed to the Centre was also recognised. "A shorter course that lasts for two weeks with resources well thought-out might be worth doing—but that might not be viable; it might not be worth their time doing it and printing it." The school linked this concept with the need for national centre and schools to be much more in touch with each other than in the past. "Schools prepare their own materials that are relevant to their needs and I think sometimes the national centres could have a closer look at these. Perhaps there could be a closer linkage and that way the centres could keep packs in line with what is being used in schools, for example, the time a project should last to get the best out of the pupils. A closer link with the schools could produce a more efficient system."

The other project, Integration of Social Subjects S2 focuses even more sharply the need for a viable resources organisation in every school, especially those in areas where there is a minimum of resources or no central resources centre facilities or no subject advisers. For one such school involved in the project the choice of them was influenced by a lack of media resources but especially by an abundance of "primary" resources, e.g. records, old photographs, co-operating members of the community, historical materials, graveyards etc. A staff member involved in the project said "We suffer a lot from our remoteness. I've never been to the Glasgow Centre and we have no advisers for our subjects in the region. The fact we have not used media resources in the project does not mean we are unaware of their uses. Regarding the use of media resources generally we use film and filmstrips. I don't use the overhead projector simply because it hums and upsets the pupils. The film projector is ricketty. Any problems we have with media resources usually arise from defectiveness of equipment. I would prefer if they were going to spend money they would give us somebody who could tackle these physical problems rather than just get advice. I order a film normally every two weeks from SCFL. Unfortunately I often find the films I want have been ordered by other people".

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When the bread and butter media problems, very real to the participating teachers, are set against the attraction and accessibility of the "primary" resources of a country environment, one realises how these facts influence the choice of and approach to a subject. At the same time they underline the need for an improved national education structure which will meet the media resource needs of schools in an isolated situation. In the above case the simple fact was that the school did not in the first instance use media resources at all in their project because, as a teacher said "There was really nowhere we could turn for support in terms of media".

This latter statement probably underlies the sense of remoteness and unawareness that some teachers experience in relation to central service facilities for curriculum and resources. During the investigation the same feeling emerged in widely separated areas of Scotland and in relation to areas of the curriculum apart from the social subjects. It is a problem that must be faced in national projects which are attempting to foster and encourage curriculum development by schools undertaking initiatives on the basis of self-analysis of their own needs as against piloting centre-prepared packages, planned and designed outside the local situation. How can a national structure be devised to meet the production and informational needs of local curricular objectives often in isolated environments without resource facilities? For those who are concerned with the problem at national and regional level, the emerging conclusions of the work done in this field by the Council for Educational Technology for the UK which has been developing a comprehensive pack known as the Local Authorities Support Services for Educational Technology (LASSET) are significant. This among other important areas covers support services including support for the production of curriculum materials.

The information that will accrue from the Glasgow Centre's Integration in Social Subjects S2 project should be of value for the future. This key project which is a credit to the Centre's multi-form approach to curriculum development deserves close study in the months ahead as it should pinpoint media problems relating to different social and widespread geographical environments and offer a firmer test-bed of comparison and contrast with Centre-controlled planning and resourcing.

It may be of interest to note that in studying some of the other Glasgow projects in the schools, the investigator found a growing interest in the function of media resources in Business Studies and Economics. A member of the working party on Economics S1/S2 stated "I could think of a fairly large number of areas of Accounting in which either overhead

transparencies, filmstrips or films would be valuable and there is practically nothing in that field. I notice when I get the SCET bulletins and go through them—indeed I have a SCET file—there is practically nothing. This is something worth following up". A principal teacher who had been involved in the Economics project said "There is a real need for up-to-date slides in Economics and Business Studies. If we could get help I can see the overhead projector being used much more in Economics. We use VCR for older classes to record programmes like the "Money Programme". We use these from 3rd to 6th year but there are practically no media resources used with younger pupils".

A recurring problem in the use of resources for Economics S1/S2 was voiced by one teacher "The average teacher with little experience of teaching Economics S1/S2 would be hard pushed to use media unless he got quite a lot of technical help to set things up".

This brief review of the Glasgow Centre's activities does scant justice to the positive effect of their projects. It has touched upon what are real problems to teachers involved in national projects and these will be summarised in the final section of the report. When one studies the amount of progressive curriculum planning during the past seven years at the Glasgow Centre, one can appreciate the potential resource-based contribution of the Centre's multi form approach to a co-ordinate national curriculum development service in the future.

C. Discussion Areas

The third section of the report deals with areas of discussion relating to media, arising from statements by teachers and discussions with members of supportive agencies.

(a) NATIONAL WORKING PARTIES

The question of the need for media expertise either within working parties or available to them from an early stage of planning kept recurring during the investigation. A member of a working party typified this general feeling when he said "Our working party is acutely aware of the importance of media resources and is keen to use them. But frankly we don't have adequate knowledge of that field and there's not much really professional help around when you seem to need it.

The Convener of a Steering Group emphasised the need for constantly available expertise, and the indispensable help given by the only full-time professional lecturer/producer in the audio-visual field within the SCDS to the members of his group. "We've reached the point where we're going to look at pupil material, also at the various audio-visual elements within each unit and we had to have an expert and spend a whole day talking to him about what we should select and do—what we should do about types of film that we use, to standardise colour and that kind of thing, would it be possible to do a sound tape on such and such, or a simulation game, the question of costs. You do need an expert, somebody who can sit down and talk."

The stage at which expertise is available to working parties is a matter of concern. There was general agreement that this should happen when consideration of content and methodology was at an early stage so that informed judgements could be made about the function of the media contribution, the selection, production and use of the materials. A working party convener said "Regarding the use of resources we were always aware of this need from the start but it wasn't until about four years after the start of the project that we had our first real look at this". Although the extent of this time-lag is not typical, it alerts us to the danger, that fortunately is to some degree diminishing, of regarding the media element as an accretion rather than an integral educational component in the teaching/learning situation.

Attitudes to media within working parties are not uniform or unanimous. The investigator encountered some scepticism although, in general, convictions about media were positive due largely to sophisticated thinking within the centres' staffs. A statement of minority opinion about the value of media input was "Our working party are experts on subject matter. That is what is really important". Another example was that of an almost total resistance to media by a working party presenting a country as background for language teaching. On balance the positive attitudes to media were more widespread. Nevertheless, differing attitudes illustrate the need for a constant infusion of expertise and information to help informed judgements to be made about media input. If no professional expert is present it would be helpful if there were available instructional data on the criteria for the selection and use of media in teaching/learning situations.

Another area of discussion concerned the production of materials for national working parties at a reasonable speed. There were many references to the length of time it took to make resources available and to the timing of resource input. One teacher said "We're going to get filmstrip and slides. I think it would have been better if we had had the help of these things sooner". Another said "We saw a filmstrip at the conference. Now if we'd had that at the beginning, it would have made the job a thousand times easier—even that one filmstrip". Problems facing working parties in the area of the production of media materials are partly the result of the confused state of media production across the whole educational system. There exists much uncertainty in working parties about where and how to obtain resources as speedily as possible. At present working parties get "emergency" help from, for example, individuals with a personal interest in media in colleges of education, also from Audio-Visual Media or Resources for Learning Departments of colleges of education or from the Scottish Council for Educational Technology. In Scotland the production and distribution network is a scattered and unco-ordinated one with media materials being produced at different levels by different agencies and by the schools. The investigation indicates a need to rationalise media resource production and perhaps to establish a base which has an overview of all national needs or a co-ordinated set of bases. "At present we are a beast with all its legs wriggling and alive but separated from each other and from the body." The reasonable demands of working parties for appropriate media components to be made available more promptly, and with the minimum of logistical time-consuming difficulties, point to the need for a more coherent and intelligible method of production to meet national needs.

Another discussion point concerns the membership of working parties, as this relates to the effective use of media within schools. As was noted in the Introduction most national working parties and steering groups are composed mainly of college of education lecturers, education authority advisers and principal teachers, with the Inspectorate represented. Sometimes there is included an assistant head-teacher who has responsibility for the curriculum within a school. Recent research is pointing to the potential influence of the assistant head-teacher with responsibility for both curriculum and resources, and there is evidence, although at present limited, of a marked positive effect some assistant head-teachers (curriculum/resources) are having on the resource organisation of their schools. The maximum use of media in national projects can depend upon an effective resource organisation within schools where they are being piloted or implemented. Thus, though principal teachers have been the main focus of choice from within the schools, there is perhaps a case for a wider selection which includes more assistant head-teachers who have responsibility for both curriculum and resources.

The national working party system has two major advantages. A member temporarily leaves his sphere of daily activity in his or her school to find a national viewpoint which is striving to meet a national need. His or her perspective is widened and so is contact with fresh accumulated expertise relating to curriculum development. Thus the prospect of extending levels of teacher representation is worth consideration.

(b) EDUCATION AUTHORITY ADVISORY SERVICE

There are many subject advisers involved in curriculum development at national level either as members of working parties and steering groups or as agents supporting national projects in the schools. The investigation points to the adviser as a key link in the chain connecting the objectives and projects of SCDS with their progress in the classroom. An adviser said "We've got to be careful we're not duplicating what other people are doing in curriculum development. There are the national centres on the one hand, there is the individual school or little groups of schools on the other. We can fill the gaps in-between. We can take a national production and fill it out perhaps and give it local relevance".

Thus it is seen that positive participation by advisers at national level in no way conflicts with their remit relating to their specific, priority responsibilities to their local authority employers.

Indeed it underlines the "oneness" of the problem of curriculum development within the whole system. The relationship of advisers and teachers who are piloting and implementing national projects is worthy of further study. Potentially it is a relationship which can help the adviser, through a common interest in a national project, to strengthen his link with the school, to encourage the development of a project during its implementation, to discover a problem area such as that of media input and to help the national centre by a regular feed-back of information. The investigation indicated some gaps in the ideal picture. There were isolated cases where more support would have been appreciated. "We've been doing the project and have never seen the adviser since, although he introduced it to us." "I've been piloting this project for over a year and could have done with help in media resources but nobody visited us." Such isolated statements may be countered by reference to the demanding pressures and competing commitments of advisers. But they spotlight the general need of support which advisers, with the support of regional and local resource centres, are in a good position to help to meet, and largely do meet.

In speaking to advisers, the investigator found a lively interest in and a co-operative approach to curriculum development at national level. A central problem was stated by one adviser in this way. "In a compact authority advisers had a pastoral care. With regionalisation the job has evolved into dealing with a great deal of administration and staffing so that in fact we tend to go now on demand rather than go out where we would want to go for educational reasons."

In addition to subject advisers there are six regional "Advisers in Educational Technology" though the actual job titles may differ. There is no direct contact between them and SCDS. A subject adviser said "The contacts of the Adviser in Educational Technology are all local. The same man you'd be expecting to get advice from on film, filmstrips, etc. is also a man who is running a maintenance service in regard to television and VCR's. For the purchase of equipment he is responsible to the Director and for ensuring that the equipment is standardised and is bought at competitive prices. So in fact the man is under intense pressure. He is only too willing to help but he hasn't the time. As the job is run at the present time, it would be almost impossible for the Educational Technology Adviser to be involved at national level". Nevertheless, in practice, but only within a local context, a subject adviser can and has asked his educational technology colleague to visit a local school within his own area to give advice and support in a media problem within a national

project. This is another example of the significance of the relationship between SCDS and the Advisory Service.

In the light of the investigation, the relationship is a discussion area which deserves further consideration. Reference to this is made in the final section of the report.

(c) BROADCASTING AUTHORITIES

The investigation focussed on problems of the relationship of curriculum development at national centre level and national broadcasting. One is the need for close co-operation at a very early stage in the planning cycle. A broadcast producer said "Regarding the working party I was particularly involved with, it was an exercise made more complicated by the fact I came into it later than I would have liked to. We had to continuously refer the scripts back to the working party to see that they accorded with the educational aims they had laid out. Being in at the beginning would help tremendously".

The idea of a working partnership is realistic if national centres and broadcasters start thinking early enough about it. The latter must work through school broadcasting committees so that if a project is contemplated for 1980–81, the possibility of involvement by the broadcasting authorities would have to be put to their committees in October 1979.

The meetings of Centre Directors and the broadcasters, instigated by SCET, have been welcomed as a step forward. But the investigation, in view of the present limited working contacts, suggests the need for a more urgent awareness by all concerned to keep a constant eye on any significant development in the pipeline and for greater communication and more widespread involvement across wider areas of the curriculum.

There has been a change in attitude by the broadcasters towards involvement in curriculum development during the last four or five years. They have moved more in this direction because it is felt this can bring broadcasting from the periphery of education into the centre of activity. The example of Geography S1/S2 has been quoted as an illustration of this and its success is largely due to the fact that it relates closely to a new syllabus. This surely is a pointer to future co-operative planning.

A crucial factor about the decisions of the broadcasters to become involved in national projects is their judgement and also the judgement of SCDS about the extent to which the final product would be taken up by a

relatively large number of schools. Given the amount of broadcasting finance, staff effort and technical resources required, a project would have to be used by a relatively large number of schools to justify its validity.

In practice co-operation demands an understanding of professional roles. The national broadcasting authorities see their contribution as a genuine, professional broadcasting contribution. For example, in the Social Subjects project, "Living with Others—Rules and Responsibilities" they have to be seen to be offering thoroughly professional drama in relation to the teaching package. Their role here is not teaching by radio. On their side the curriculum developers determine the educational aims and objectives within which media must make the appropriate contribution.

The study of broadcasting media input to national curriculum development is a discussion area of such significance that there is need for more urgent and more constant consideration of all the aspects involved in the relationship if the present very limited impact on the curriculum is to be extended.

SCOTTISH COUNCIL FOR EDUCATIONAL TECHNOLOGY

Details of SCET's contribution to curriculum development at national level are given in section B of the report, dealing with the individual centres. The contribution may be seen under three headings: providing information on media based on professional expertise; facilitating media materials to support working parties; acting as a co-ordinating agent among other sources of support for curriculum development.

1. Providing Information on Media Based on Professional Expertise

A centre Director said "We decided to have no more to do with hardware information recommendations when SCET was set up because we regarded anything we could do was something they could do better". Another Director said "One of the prime needs is for harder professional information at the early stage of programme planning, about the relative viability of resources and materials that go into schools". A third Director states "What we would like from SCET is not so much at the present stage particular kinds of media resources, although these have been obtained as requested, as particular kinds of advice and information". Regarding a basic need for expertise and information at the earliest

possible stage of planning procedures, the investigator was struck by an apparent unawareness of a vast treasure-trove of professionally and commercially produced media resources untapped by working parties. If the extent and appropriateness of these resources had been known to those devising curricular programmes, time and effort could sometimes have been saved in trying to produce new resources. The judgement as to whether it is better in a given situation to use a known media product or to produce a new one will be made more effective by the early presence of someone with specialist media knowledge and expertise. The Director of SCET states "There are vast resources in existence at the moment not fully utilised and not even properly known about. Too often our minds turn to producing new materials when there already exists material which may not be absolutely on line, but considering the cost, the time and trouble involved very often in the production of new materials, a little adaptation and indeed imagination could enable them to be utilised appropriately. It should be one of SCET's roles to get resources more widely known, more information, more preview facilities, for people to see material, understand it, assess and evaluate it. This involves development of our information service".

Evidence also shows SCET making information and expertise available in a more personal way. An example is the co-operation between an SCET Adviser in Educational Technology also with a specialist background in English, and the Director of the Edinburgh Centre who has a national responsibility for English teaching. The Director says "The situation is promising as a result of the appointment of SCET advisers. I find I can communicate very easily with the adviser working with me, and I think it is because he understands what we are aiming at. He is an English specialist and he has access to more technical expertise which he can modify through his understanding of what the nature of each project is. It may well turn out that this is the best channel of relationship between SCET and the national curriculum development service through advisers who have some specialist understanding".

2. Facilitating Media Materials to Support Working Party Projects

This contribution by SCET is more in evidence in centres which, unlike the Glasgow Centre, have no full-time, qualified expert in media materials production. Examples of this kind of contribution by SCET are noted in section B of the report. The production of media materials for use at all levels within the educational system is at present a hotchpotch of amateurism and professionalism, of such uneven quality and inadequate

quality that there appears to be a need for an authoritative, nationally recognised production base which has both an overview of national needs and the ability to satisfy them in a completely professional way. A major discussion point is how this can be effected.

3. As a Co-ordinating Agent Among Other Sources of Support for Curriculum Development

As has been stressed there are many agencies supporting curriculum development but, apart from SCET, there is no agency that concerns itself with an overview of the national pattern of media resource provision and information. This gives it an advantage as a co-ordinating agent and there is evidence of how it is fulfilling this role. For example, the regular meetings instigated by SCET with the Directors of SCDS are beginning to create a deeper understanding of each other's needs. For SCET they are providing more detailed knowledge of the media requirements of SCDS and for the centres an authoritative focus of information and expertise. The same kind of co-ordinating role by SCET is seen in the meetings which bring together national centre staff and national broadcasting staff. It appears that the co-ordinating aspect of SCET's work is worth further study for its potential impact in other areas, such as information on media input to the printed bulletins issued by the centres to the schools.

The ultimate effectiveness of SCET depends on its relationship with other supportive agencies within the system and the clarification of that interdependence. SCET should support innovation elsewhere as well as initiating it. If local innovations are taking place regardless of what SCET is attempting or if SCET is implementing national commitments regardless of what is taking place locally, its potential within the system will be greatly reduced. That potential stems mainly from the fact that it is in a position to take a national view and to undertake a commitment that is best done at national level. The establishment of the film library by the Scottish Film Council was an example of this. Nevertheless, the future of SCET must be seen *within* a total system of many agencies which are attempting to meet media resource problems at different levels in different professional environments—in schools, in teachers centres, regional and local centres, colleges of education and national curriculum development centres—and the role of SCET becomes clearer when it is seen as filling gaps and interlinking with and helping to interlink the whole network of agencies across the system. The present investigation indicates that its "slot" within the national system, in terms of the three areas of contribution outlined above, is becoming more significant and necessary.

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(d) PUBLISHERS AND NATIONAL CENTRES

The problems involved in the relationship between the national centres and commercial publishers are more difficult than those with other external organisations, such as the national broadcasting authorities or SCET. The element of commercialism is a differentiating factor as is also the competitive situation among publishers. For example, one problem indicated by the investigation is the desire of publishers to be represented at as early a stage as possible in national working party planning, as it has been proved in cases in England that the successful publisher has been able to make a considerable contribution to proposals prepared by a working party or development group.

This is a sensitive area where each side is contributing a special kind of expertise which must be respected by the other. Perhaps the most difficult aspect of the problem confronting the centres and their working parties is deciding what is the right time, before ideas and plans have crystallised, to contact publishers through the EPC to give publishers the best opportunity to contribute their expertise to the final product. This is especially so when a working party is anticipating an input of media resources.

With the prospective development of SCDS in secondary subject areas not so far represented, and with developments in primary curriculum development, the problems of marketing products nationwide will increase. A professional selling organisation is necessary where extensive national demand might overtake the capacity of national centres to provide facilities for re-printing and re-issuing.

It would appear that to implement a professional commitment it is necessary to devise a recognisable system or structure for keeping customers fully in the picture, for handling requests promptly and sending out materials on a national scale. A definite machinery for this purpose would appear to be a greater possibility, with the further involvement for co-operation with the EPC.

This should be an added stimulus to curriculum development which must capitalise on all types of expertise. A point of interest is that members of EPC in England have given time to Council business which involves, e.g. study of copyright, public relations, lobbying M.P.'s and local authorities about expenditure on schools, and so have created informal, spin-off advantages for curriculum development.

The investigation indicates a good case for exploring further the problems as they relate to publishers and their involvement in a multi-media

contribution, and for trying to develop a fair working relationship with SCDS. A member of EPC, reflecting on the relationship said "I find it difficult to imagine how a publisher would commit himself to a project before anything was actually in existence. Yet, when you think of it, I suppose we do it with authors. We commission publications and nothing exists except the idea. Why can't the same thing work with curriculum development projects?"

Ultimately the key may be the sensitivity of a centre in the timing of its contact with EPC, and of its awareness of how much it expects from the publishers of expertise and developmental ideas in an exercise of co-operation. The problems involving print and media resources within national projects can only be progressively understood and assessed through more constant contact and active co-operation in the future with EPC at the levels of the Inspectorate and SCDS.

(e) RESOURCE ORGANISATION IN SCHOOLS

In the context of the piloting and implementing of national projects, the connection between national curriculum development and resource organisation in schools is important. During the last three years in particular factors which affect schools resource organisation and consequently the implementation of national projects have been more clearly identified. The CET Working Paper on Resource Organisation in Secondary Schools and SCET's Resource Liaison Project are examples of such investigation.

Schools vary greatly in the emphasis they put on resource organisation and how they handle resources including media, and to what extent these are meaningfully integrated into the curriculum.

Evidence shows there is no ideal system of organisation that suits every school. However, these are useful pointers to progress. The argument for or against centralisation of resources within a school is no longer relevant. The fact is that both centralised and decentralised systems are used and both work. More important is availability of and easy access to information on all the resources within the school, a sensible organisation of storage and retrieval of resources and the attitudes and widespread involvement of staff. A basic need is a list of all resources within the school to facilitate use and to avoid possible duplication and wastage.

One interesting feature in some schools is the improvement in information flow on media support by the commitment of a person with special responsibility for both curriculum and resources. The investigator who

was recently involved in this area of study was impressed by the impact of a few assistant headteachers with responsibility for resources and curriculum on the resource organisation of their schools, but the lack of any general pattern in this area.

Perhaps most important is the extent to which the climate of attitudes and opinions within schools about resources and their use can be positively affected by pastoral care and through appropriate instructional literature and inservice training. That is why the present investigation has observed the contribution of agencies that can offer support to further these objectives in the field of media resources, e.g. the advisory service, colleges of education, SCET, etc. The SCDS itself has a significant contribution to make through its literature by a constant and increased professional input on aspects of media such as, e.g. publicising criteria for their selection and use.

A significant discussion area is the relationship of the activities of SCDS to resource organisation within schools, and to what extent and in what ways SCDS can contribute towards making such organisation more effective. Equally significant is the recognition that a major factor in schools is that teaching is organised in departments and that decisions about the use of media in relation to the curriculum are made within these departments.

D. Conclusions

In this final section of the report I shall summarise conclusions to which the available evidence points. I would like to stress that I shall make proposals only if I believe them to be practicable. The problem of media resources in curriculum development is made more complicated by the fact that the fluctuating force of human attitudes influences progress as much as production, technical and logistical considerations. Educational changes cannot be rushed. Attitudinal change in *homo sapiens* may be a long, painful or frustrating process, but it does happen. The present investigation suggests that if identifiable areas of weakness were studied and action taken in these areas, progress may be accelerated. This at least is an attainable national target.

The investigation has noted areas of need where appropriate action is desirable and practical.

1. AN UNDERSTANDING OF THE FUNCTION OF MEDIA

There is a need at all levels of curriculum development for a greater understanding of the function of media in the learning process. A former BBC controller of educational broadcasting emphasised the need for an informed choice among media components themselves. "We most need to conceive of our programmes as elements in a total teaching/learning situation. There is an absolute need for a far greater integration of all possible means to a fruitful teaching/learning situation than we have yet achieved in this country. In that situation, film, filmstrip, programmed text-books, as well as direct teaching, may well play their part. We ought not to think of broadcasting as having any primacy among them. In each teaching/learning situation there is an informed judgement to be made about what resource or combination of resources can best achieve the end on view."

To effect an appropriate selection and use of media at all levels by "informed judgement", two aspects of the problem must be considered (a) the need for professional media expertise to be made constantly available to working parties (b) the maximum possible reference to media in the literature issued to schools by the centres.

(a) Professional Expertise

The investigation underlines the fact that judgements on the selection and use of media have to be constantly made in the work of SCDS. Media expertise is therefore essential if "informed judgements" are to be made.

There was no evidence to suggest that if Directors of centres without full-time media expertise within their staffs were offered options for increased staffing, they would automatically choose someone with qualified media expertise as a priority. Nevertheless, the fact must be faced that the only centre employing a full-time expert in media has made available to its working parties a permanent sounding board for more informed judgements than is constantly available to other centres.

The convener of a Glasgow Centre steering group expressed his appreciation of the extent of specialist support his committee had had from the only professional media member in the SCDS attached to his centre. He gave examples of disadvantages facing working parties which had no access to similar media expertise. One must accept the fact that in the current situation, even at national working party level, the concept of media resources as something "added on" to the "real" programme has not been completely dispelled. At least part of the blame lies in the lack of professional guidance in the field of media.

This factor demands more urgent attention because of the proposed extension of SCDS across the curriculum. If the centres with new, formidable commitments are to operate with professional efficiency, they must either move towards a greater degree of professionalism in *every* aspect of the curriculum development cycle or get more regular, prompt, guaranteed support from other agencies than is available at present. There should be corporate service planning, especially at this time of prospective changes, to tackle the problem of the availability of media expertise during working party procedures. Another target of such corporate service discussions should be how to devise mechanisms to make such expertise available much nearer the start of working party procedures than is the case at present.

During the investigation a practical suggestion was made that at least a printed list of criteria for the selection and use of media resources might be made available to all national working parties. Also, during a school visit, an assistant head-teacher (curriculum/resources) made a similar suggestion. He thought that such a list might form part of a "resources information pack" which would be useful to all teachers.

As valid criteria for the selection and use of media must be based on an accurate knowledge of media, the suggestion might be facilitated with the help of someone such as a producer (A-V resources) attached to the Glasgow Centre, in co-operation with others who are professionally qualified for this task.

(b) National Centres Publications

The investigation noted the appreciation by teachers of newsletters and bulletins issued by the centres. It also noted how comparatively little information about and assessment of media had been included in that literature. This is such an obvious channel for publicising the appropriate use of media that consideration should be given to a constant input into service literature of media information and interpretation.

What might have value is a person with professional expertise constantly thinking about the maximum use of the centres' publications relating to media and how this could be effected. There is scope for common discussion at regular Directors' meetings about the possibilities of co-operation in this area; for example, there appears to be little reason why an important media topic of general interest and application may not be featured in all centres' literature. Again, a regular "media spot" identifying problems peculiar to a centre's activities could have a useful place in each bulletin or newsletter. Here SCET may have a useful co-ordinating role.

2. A SECOND MAJOR NEED IS FOR THE PROFESSIONAL PRODUCTION AND PROMPT AVAILABILITY OF MEDIA RESOURCES RELATING TO WORKING PARTIES' PROJECTS

The investigator noted the difficulties, and strains imposed by them, experienced by national working parties in obtaining within reasonable time media elements selected for their projects. In the case of one scheme, this was significant as it affected the value of pupils' material as they worked towards an examination.

The investigation indicates the need to rationalise media resource production in Scotland and effect more cohesion in distribution. From national working parties to classroom teachers there were reasonable demands for appropriate materials to be made available more promptly and with the minimum of time-consuming logistical problems.

It is not only in industry that the phrase "late delivery" exemplifies a national weakness. The investigation indicates that the weakness is partly

due to the lack of an identifiable national focus of professional production, a centre with an overview of all national needs and with adequate feed-back of information on those needs. This appears to be necessary as the scatter of production agencies such as regional or local resource centres or colleges of education have specific and therefore limited objectives but not a national overview. The variety of "emergency" sources to which national working parties have had to turn for media components underlines the need for prompt, guaranteed materials. Evidence points to the fact that, in whatever form or degree, involvement by SCET appears to be inevitable as a co-ordinating agency to effect greater cohesion in the system.

3. A THIRD MAJOR NEED IS TO IMPROVE LIAISON AND INFORMATION FLOW RELATING TO MEDIA AMONG THE DIFFERENT SUPPORTIVE AGENCIES

(a) The Education Authority Service

It should be stressed that as each agency within the system, for example, the education authority Advisory Service, has its own role and responsibilities, there is no question of suggesting a national role for an education authority employee with a regional remit. However, certain points are indicated by the investigation. One is the unique opportunity of the adviser to identify difficulties and emerging problems in the schools, including schools implementing national pilot schemes. Another is the positive involvement of some advisers in national working party planning. The significance of the adviser as a link in the chain of curriculum development that connects SCDS and the school cannot be sufficiently stressed.

The investigation indicates that there is scope for more effective liaison between the advisers and the centres. It is suggested that current meetings between centre staff and advisers could be further developed in the form of brief seminars with specific objectives, e.g. a study of aspects of media input during the implementation of projects in the schools or a study of possible mechanisms of feed-back of information on the use of media to the centres.

The need exists for a constant information flow on specific media difficulties or problems to centres sponsoring national projects. Advisers are in a key position to encourage and effect this during the piloting and implementation. There should be more corporate planning in this field of activity.

(b) Broadcasting Authorities

The prospect of an extended national curriculum development service in Scotland is a further challenge to both SCDS and the broadcasters. As was noted in the introduction, the Scottish broadcast provision does not cover wide areas of the curriculum and in the context of Scottish-originated programmes the gaps are glaring ones. But even with a UK and Scottish provision that has made a rich contribution over the years, a negative fact is the often inadequate use made by schools of the media material offered to them. Many factors underlie this situation, but the present review suggests that, if there had been more meaningful, active co-operation between the curriculum developers and the broadcasters over a long period significant advantages might well have been seen in terms not only of larger audiences for broadcast programmes but of more widespread and intelligent integration of these programmes relating specifically to national projects and to curriculum development in general. A foretaste of the advantages may be seen in the case of Geography studies where the involvement has been mutually beneficial.

As previously indicated there are conditions and problems which have to be faced.

1. The extent to which a costly, fully professional broadcasting contribution is taken up by schools must be a factor in the broadcasters' consideration about involvement.
2. The kinds of planning arrangements by which broadcasters can participate from the beginning in national working party discussions.
3. Acceptance and mutual understanding of professional roles as a condition of fruitful co-operation.

This places a responsibility on each side to be constantly aware of the need to keep the other fully informed on a regular, short-term basis. Thus although the present meetings, co-ordinated by SCET, have made a useful beginning, more thought must be given as to how the quantity and quality of liaison should be further realised if impact on the curriculum is to be more meaningful and widespread.

Although this review is primarily concerned with secondary education, the prospect of natural curriculum development for primary schools emphasises the need for close involvement by the broadcasters, especially as in the past they have found primary education a more receptive field for their programmes. Every effort should be made to link effectively prospective planning for primary school curriculum development at national level to the programme plans of the broadcasting authorities. It is

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hoped that those responsible for an extended natural curriculum development service will see the relationship as a significant part of the total problem of media resources in curriculum development.

(c) Scottish Council for Educational Technology (SCET)

During the investigation statements indicated three areas where it was suggested that SCET had a contribution to make.

1. Facilitating an *early* input of advice and information into the planning of national working parties. With only one qualified audio-visual expert in SCDS, an external solution to the problem should be sought with some urgency.
2. Helping to facilitate the supply of media materials *more promptly* than is possible at present. This involves taking note of the need to rationalise the production of materials and accepting the implications of an authoritative, professional base with an overview of national needs.
3. As a co-ordinating agent helping to develop and strengthen liaison between supportive agencies contributing to curriculum development. As has already been indicated, an area which would benefit from a co-ordinating agent is that of SCDS publications where there is need of a regular input of media interpretation and information. Someone concerned with the publications as a whole could help to co-ordinate and maximise such a contribution. In the case of SCET this might be done through use of its advisory service in close consultation with the staff of SCDS.

(d) Publishers and National Centres

There appears to be a need for more constant and structured liaison between the Educational Publishers Council (EPC) in Scotland and SCDS *as a whole*. At the present stage the greatest need is to discuss together general problem areas, some of which were indicated in section C of the report and to explore the possibilities of long-term co-operation.

It seems reasonable that some kind of EPC representation, decided by EPC could be included in discussions of a general nature, such as those that take place, under the sponsorship of SCET, between the broadcasters and SCDS.

In view of the developing interest in media components and in multi-media-kits by publishers, the mechanisms of a regular, ongoing dialogue should be given further consideration by EPC and SCDS.

School-based Curriculum Development

An area which focusses the need for more meaningful liaison among the various supportive agencies is that of school-generated or school-based curriculum development. We noted part of the SCDS contribution to this area through projects such as Integration in Social Subjects in S2, and local projects sponsored by the Edinburgh Centre. These ventures underlined advantages such as potential for increased personalisation between national centres and schools, and the possibilities of more active teamwork and information flow between national centres and education authority advisers who can link the schools to local resources centres.

The investigation suggests that such co-operation may be strengthened by, for example, short seminars with precisely-defined objectives, involving SCDS and advisers as a core, with other associated agencies involved. Such seminars could provide a forum for the discussion of specific problems, e.g. implications of school-based or school-generated curriculum development, and mechanisms for media and other resources support necessary for its progress.

There is another important aspect of school-based development to which reference was made in section B of the report—the potential impact on resource organisation within the schools of assistant head-teachers who have responsibility for curriculum and resources. It was noted that the impact in a few cases was significant where there had been training in audio-visual resources and exposure to informed thinking about media in curriculum development. Examples, though not numerous, are sufficiently important to warrant reflection on how supportive agencies can contribute to this area of need. There are, of course, the Diploma courses in Educational Technology at Jordanhill and Dundee colleges.

Jordanhill College of Education, in its course "Management for Senior Promoted Staff in Secondary Schools", which it is running in conjunction with Strathclyde Region, includes sessions organised by the A-V Media Department. These are devoted to the management and the quality of use of media resources in secondary schools.

In this case we have a college of education acting both as a participating and co-ordinating agent with a local authority, and providing, through conference or seminar, for the training of assistant head-teachers and others in posts of responsibility.

The investigation suggests that there should be an extension of such activities. The challenge to each agency—SCDS, colleges of education,

education authority Advisory Service, SCET, the broadcasting authorities and others—is to examine with some urgency ways of initiating with an associated agency or agencies discussions or seminars with carefully planned agenda relating to all aspects of media output.

A former British Prime Minister, analysing Britain's comparative decline during the last thirty years said that a weakness was the fact that the major organisations which make up the nation's structure had lost "the sense of all belonging to one body and to one another" and that they had been too narrowly concerned with their own strategies and objectives. There had to be greater conviction of the need to act together. This is a key factor underlined by the investigation in the area of media input and one to which all organisations involved in this field should give serious consideration—the need for more frequent liaison, greater co-ordination and increased information flow.

Each organisation, conscious of its relationship with others, must seek fresh initiatives. The present review has offered some pointers to action which in the light of the investigation are both necessary and practicable.